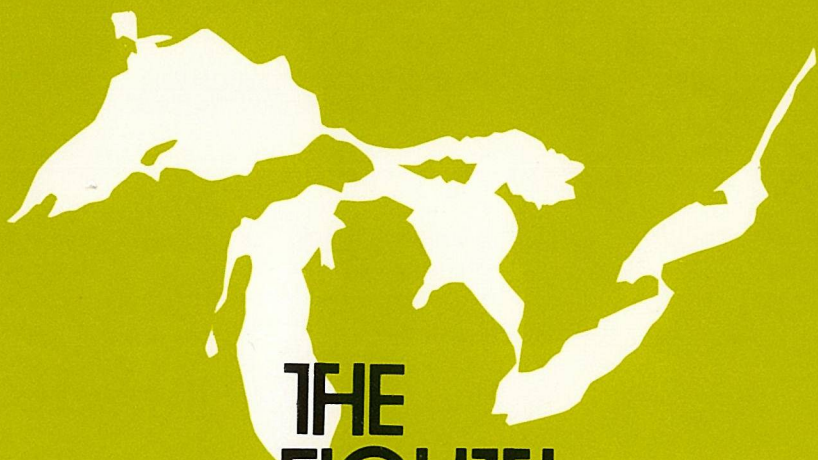




**THE
EIGHTH
LACUS
FORUM
1981**



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THE EIGHTH LACUS FORUM 1981

edited by Waldemar Gutwinski
and Grace Jolly



HORNBEAM PRESS, INCORPORATED
6520 COURTWOOD DRIVE • COLUMBIA, SOUTH CAROLINA 29206

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FIRST EDITION

Published in Columbia, South Carolina by Hornbeam Press, Incorporated,
6520 Courtwood Drive, Columbia, S.C. 29206.

Manufactured in the United States of America.

ISBN 0-917496-22-1

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INTRODUCTION

The Linguistic Association of Canada and the United States (LACUS) returned to Toronto on August 10-14, 1981, this time to Glendon College of York University. The health of the Association was particularly evident for, although strikes by the Canadian postal workers and the American Air traffic controllers made it difficult or impossible for some members to attend, there was a full complement of papers presented in well-attended sessions. Besides the usual American and Canadian contingents, members attended from Britain, the Continent and Brazil.

At the beginning of this volume we have placed President Saul Levin's "Standard English, Good English, Correct English" which stimulated so lively a discussion following the presidential banquet. In the same section we have placed Isidore Dyen's inaugural address and the lecture of our distinguished special guest, Sebastian Shaumyan, "The Goals of Linguistic Theory and Applicative Grammar".

The second section, titled *General*, is general indeed betraying us as joiners rather than splitters. Here we have put together both theoretical and descriptive papers from a number of different perspectives. They are arranged top down roughly from semantics and lexicology through syntax and morphology to phonology. For the third section we have borrowed from the inaugural address the term *Genetic Linguistics* under which to subsume historical and comparative topics. Papers on language in culture and society fall under the headings *Language Ecology* and *Applications* depending upon the degree of specificity and focus. *Discourse*, represented by a large number of papers, is placed in a separate section.

That discourse is a matter of continuing interest and exploration was indicated not only by the formal papers but also by the attendance and participation at the informal workshop on Short Texts in English. Following the 1979 LACUS innovation, one evening was devoted to informal workshops on topics of special interest to participants. Eugene Winter, Mike Jordan, Mike Hoey and Jim Monaghan conducted the demonstration of a clause relational approach to the analysis of various kinds of very short English texts; Julius Nyikos led a workshop entitled "Anonymous Linguistic Experiment"; David Lockwood led a discussion of stratificational topics, beginning with a proposed revision of his *Introduction to Stratificational Linguistics*.

Generous support for the Eighth LACUS Forum was received from the Social Sciences and Humanities Research Council of Canada in a grant which helped toward travel and subsistence expenses of the invited speakers and several other participants. We are also grateful for financial support from the York University President's *Ad Hoc* Fund and from the Principal of Glendon College.

Michael Cummings served with us on the Local Arrangements Committee and assisted in obtaining funds from agencies of York University. The Committee wishes to express its thanks to graduate students Karen Malcolm, Amanda Bright, Sada Niang and Linda Lamont, and to all our colleagues at Glendon, York and the University of Toronto for the many ways in which they helped.

We owe special thanks to the staff of the Office of the Dean of Students, Suzanne McCaffrey, Jan Morrissey, and Deirdre Maclean for their large contribution to the conference arrangements and for their patience and good humour throughout.

Valerie Becker Makkai's experience and active assistance at the Conference desk was especially appreciated as is her indispensable contribution to the preparation of this volume. She and Adam Makkai arrived first and left last, and we benefitted throughout from their strong support.

Finally we want to thank Amanda Bright, our editorial assistant, for the many hours she devoted to the preparation of this volume.

Waldemar Gutwinski

Grace Jolly

Toronto, Spring, 1982

I

1981 PRESIDENTIAL ADDRESS

STANDARD ENGLISH, GOOD ENGLISH, CORRECT ENGLISH

Saul Levin

State University of New York at Binghamton

The presidential addresses of my honored predecessors have been diverse and suggest to me only that I am free to choose any subject and develop it as I wish. So it would be tempting to talk about the linguistic subject which is most on my mind. But I will mention it only to lay it aside on this occasion. For the closing years of my career, and for my retirement, I have already begun to think about a book on the comparative grammar of the Semitic and Indo-European languages. It is to be briefer, less exploratory but more systematic than the long book published in 1971. It will contain the advances, at least in my own understanding, since I have had the opportunity to study several more ancient languages. But a preview of it would be out of place now; it would have to be very technical.

Instead I will take advantage of this forum to express my views on a subject known to many more people. Most of you will probably disagree with me; for I disagree with the leading linguists of the twentieth century -- the leading ones in America anyhow. But whether or not you like what I say, the matters of controversy will be put into focus, and you will have something to argue with me about.

I believe that linguistics ought to be very much concerned with what constitutes the standard form of a language, and why some variations are considered legitimate while others, although understood, incur disapproval. Moreover, standard usage changes; and linguists, by virtue of their special knowledge, can clarify the unsettled points and contribute either to intelligent acceptance of a change or to intelligent resistance.

I would not exaggerate the potential influence of any authority or would-be authority upon language under present circumstances -- nor, for that matter, under most circumstances in the past. What people will say and write, or more generally what people will do, is determined on the whole by their own sense of what is done. But where usage is not uniform, some may be guided by whomever they regard as an authority. So there is room for informed, thoughtful opinion to operate. The best qualified linguists are not obliged to leave it entirely to schoolteachers on the one hand and journalists like Edwin Newman and William Safire on the other. While anyone is free to make his or her views known, a linguist's views may be worth more.

Many linguists, however, are wedded to the idea that if linguistics is a science, they must in principle be committed to neutrality -- being aware of whatever differences in expression are

semantically equivalent, or nearly so, but not declaring one correct and another incorrect. In practice, they all write standard English, as best they can, and they speak it too. In practice they merely conform as educated people. But insofar as the standard is in flux, I maintain that they are in a position to use their heads, if they will, and not only make a rational choice for themselves among the possibilities but also explain to the public what is the advantage of one expression over another, or why there is no advantage.

They must not claim to be anything more than well qualified individuals. They will disagree; but by stating their reasons, they will help others to make up their own minds. There is no need to act in concert. An academy with some sort of custody over the English language is out of the question. About the French language, either in France or in French Canada, I can scarcely venture an outsider's opinion as to the worthwhileness of an academy; the history and the present problems are too different. But in regard to English, whether in North America or Great Britain or elsewhere, I perceive the standard language to belong to all those who address the public in print or an audience orally, whether seen or unseen; but especially it belongs to those who edit other people's words. There are millions, besides, who use the same standard language privately, in conversation or correspondence.

If the linguists would agree with me to the extent of doing their bit for the maintenance or improvement of the language, they can expect the effect to be small but not negligible. It is beyond their power to preserve the language, or to change it much. But I would not infer that it makes no difference if we linguists do nothing deliberate to enlighten the multitude of speakers and writers. Although we are a tiny part of the scholarly profession and would not be greatly missed if we were to disappear altogether, still we do have some expert knowledge -- such as it is -- and it does bear upon the general definition as well as the specific features of a standard language. So why not apply that knowledge, for whatever good it might do?

After all, no linguists -- whatever they may believe -- can stop other people from being actively concerned with a certain norm of English. Nor can that concern be discredited as based on mere prejudice or mistaken premises, although some major linguists have indeed tried to discredit orthoepy and normative grammar by that very argument. The criticism has had one noticeable, if minor effect: less is said nowadays about good English or correct English; instead the expression standard English has been substituted. It is a sort of euphemism; for it avoids the immediate implication that some people's English is bad or incorrect. But it hardly changes the reality that teachers and editors will not let anything pass which they consider wrong, even if now they mildly call it substandard or (still more mildly) non-standard.

The anti-normative linguists got caught in a paradox, but society in its way has more or less resolved it. They insisted that no words by which some people communicate are wrong, or bad English; the words are understood, and that makes them good for their

purpose. But if that were so, then the terms of the orthoepists--*good* and *bad*, *right* and *wrong*, *correct* and *incorrect* -- must also be right. For people in general understand if you tell them, "It is bad English to say *The neighbors is friendly*; in good English it is *The neighbors are friendly*."

The real trouble is that it is tactless to call such-and-such "bad English." It puts people into a low class for saying *The neighbors is friendly*. Especially if English is their only language, there seems to be no excuse for speaking it incorrectly. But that is a needlessly harsh, unsympathetic judgement. The educated class, which is larger than ever, has abated its judgement, insofar as it has taken up a gentler term. It has not been won over by the more extreme linguists, but it has compromised a little. What used to be called good or correct English is still required, but now under the name of standard English.

We hear many complaints, however, that the requirement has broken down in fact, not just in name; for vast numbers of students go through school, and even through college, without mastering the essentials of standard English. They write and speak badly: incoherent and illogical sentences, lapses in grammar, feeble or trite or affected vocabulary, and much else that is wrong. Conscientious teachers of composition, in the past, always found plenty to distress them; but nowadays, as is testified on all sides, the performance of students -- and graduates -- is disgraceful to them and the teachers who have failed to correct them or failed to inculcate a worthy model of English.

Most of the teachers have undoubtedly tried, and with the more amenable students they have succeeded, as always. The present magnitude of the teachers' failure is in part due, I think, to the magnitude of the undertaking to educate more and more millions. So many college graduates have been produced that the teachers are no longer looked up to, nor do they look upon themselves confidently as intellectual superiors with the right and the duty to instruct their pupils in good English. The loss of that fundamental term *good*, the replacement of it by *standard*, is a subtle factor in the demoralization of the teachers.

For pedagogy, *standard* does not carry the obvious, unequivocal authority of *good*. Although etymologically the standard is that which men would rally round and uphold with their very lives, this has receded into the distant past. No longer does *standard* connote the good, true cause. The expression *standard English*, which has been around for a hundred years or so, is more directly based on the noun *standard* in the derived sense of royal weight or measure, and especially royal coinage. So standard English meant language acceptable anywhere, like coin of the realm. It has largely superseded the earlier expression *the king's English*, which had much the same implication. Now that several independent nations use this language, with limited differences in pronunciation but a high degree of uniformity otherwise, standard English circulates more widely than either the pound sterling or the dollar.

The English that foreigners are taught is nearly always standard English, at least in principle. There are bound to be, in this audience, some who know more than I do about English as a world language; so I will not go into that topic. No one denies that linguistics can be profitably applied to the teaching of second languages, though some particular applications of it are disputed. My subject, in any case, is how the linguistic profession can help in the formation of standard English, or rather in the gradual reformation of it.

Up to now, zeal for standard or good English has consisted most often in censuring any departure from received usage or an established rule. But that is too one-sided. Few orthoepists had the wisdom to realize that not everything old can be kept alive, and that some innovations deserve to prosper. By the nature of language, innovation is possible -- at least to a limited extent; so even in a deeply conservative population, unheard-of expressions will come up from time to time. But most innovations arise or spread among persons of the opposite temperament, who go in for fads. If they spread no further, the orthoepist need not take them seriously; they will have a vogue and then vanish. Only those which begin to catch on among average people are candidates for permanence. Then not just an old-fashioned orthoepist but a modern linguist ought, I say, to be interested. No matter whether his immediate personal reaction is favorable or adverse, he cannot rationally approve or condemn the innovation until he understands why it is gaining.

Let me illustrate with something that I strongly dislike. I wince whenever I hear "a savings of ten dollars" (or whatever amount).¹ I hope there will always be people like me who say *a saving*; if I meet *a savings* on a student's paper, I will certainly cross out the *-s* in red pencil. Yet I see how the anomaly has come about. On one side we all keep hearing and saying *a savings bank*, *a savings account*, *a savings bond*. On the other we seldom hear *saving* as a singular noun: *the saving of lives*. Although there is nothing wrong with this: *Her supervisor appreciated the saving of ten dollars on the rental of a car*, still we experience the noun *saving* in this sort of construction too little to counterbalance the daily impression made by *a savings bank*, etc. The plural sense is weak in that small set of nouns such as *earnings*, *winnings*, *droppings*, *trimmings*, *leavings*, although they still take a plural verb when they function as subject -- e.g., *My earnings are less this year* and no one uses them with the indefinite article, except for *a savings*.

Some linguists would probably conclude not only that *a savings* is here to stay but that inherently it is no more incongruous than *a scissors*. I, for one, am not ready to acquiesce; for a scissors by its nature, consisting of two blades, invites a gram-

¹The 1971 ed. of Webster's *Third New International Dictionary of the English Language*, edited by Philip B. Gove (Springfield, MA: Merriam), records without disapproval "a savings pl." But Theodore M. Bernstein, *The Careful Writer* (New York: Atheneum, 1965), p. 404, cites "an annual savings as \$150,000" as a solecism.

matical anomaly, whereas savings or a saving is not really like that. A *savings* is due to mere confusion. Having accounted for the confusion, we may reasonably hope to obviate it in the future, although the history of languages warns us how often a confusion has prevailed. In some instances that may have been for lack of a timely clarification by competent grammarians; but on the whole the changes that have gone through seem in retrospect to have been inevitable. Anyhow, whatever may eventually become of a *savings* or a *saving*, I feel fortified in my present position: I say only a *saving* or *savings*, and I advise others to do the same, not to slip into imitation of a minor absurdity; for that is what a *savings* amounts to.

It is not at all earth-shaking, like atomic bombs that are liable to destroy most of the human race. Language altogether, for all of its importance or rather its indispensability, is a subject for interest and curiosity, but scarcely for worry. Not even the extinction of a language is a calamity, if it comes about through no massacre or sickness wiping out an entire people but their gradual and more or less voluntary absorption into a larger society. As for a thriving language, such as English now, nothing dreadful is going to happen. It is not even in for any great changes, although many small ones are likely. Linguistic knowledge will perhaps help to make it turn out a little better rather than a little worse.

I would like the linguists to support a reconsideration of the old rule against writing *don't*, *won't*, etc. We already have a tolerable consensus that these are correct whenever informality is intended, as in a friendly letter or in quoted speech, whether actual or fictitious. But it is time to specify when *do not* and *will not* are unduly formal. In a question *do they not* is too distant, too obtrusive, too pedantic a substitute for *don't they*, which is what we say spontaneously. *They do not*, like many other spelled-out expressions, is inoffensive in most writing because the formality of it fits the writer's detachment from the unknown, miscellaneous readers, who furthermore are reading along quite silently and rapidly. But a question, in the midst of the information or the opinion being communicated on paper, shifts the discourse over to a more intimate mode, as though the author were really challenging you to say something in response. So he ought to address you in a tone that sounds right: *don't they*, to the exclusion of *do they not*.

Linguists can readily put their finger on the historical or structural cause for the obsolescence of *do they not*. English in recent centuries has formed a limited set of negative verbs -- *don't*, *won't*, *can't*, *isn't*, etc. -- and accordingly has abandoned the old way of negating any other verb by putting *not* after it. The old way survives marginally in a formula *It matters not*, which some people still say while the rest of us have gone over to *It doesn't matter*. In French *N'importe* holds on, although the present rule of syntax would call for *Il n'importe pas*. Parallel to the English negative verbs is the restriction upon questions that invert the verb and the subject. We no longer say *Matters it?* but

Does it matter? Matters it not? has given way to *Doesn't it matter?*

Standard written English has compromised with this vernacular development. Though reluctant to write these negative verbs, with their apostrophe instead of the vowel-letter *o*, it has gradually accepted the rule that no other verbs are negated. For example, we no longer write *They fade not* -- instead, *They do not fade*, which is just the more formal counterpart to what we say: *They don't fade*. *Do they not* is less tolerable than *they do not* because of the order of the morphemes: the natural place for the negative morpheme comes right after its verb, as it is enclitic and vowel-less in speech.

Incidentally I distrust, for many reasons, those transformational analyses which maintain that in the "deep structure" it takes just one step -- negation -- to go from *They fade* to *They don't fade* and from *They're blue* to *They aren't blue*. There is in English an important difference between the merely informative *They fade* or *They're blue* and the actual affirmation *They do fade*, *They are blue*, to which the negation *They don't fade* or *They aren't blue* is most directly opposed.

They are blue, in written English, is usually just informative, the counterpart to the spoken *They're blue*. We can make it strongly affirmative by underlining or italicizing *are*. Some teachers have nearly banned this simple device, but without good cause. Unless done to excess, as Queen Victoria would underline three fourths of the words in her diary, the device is excellent. Underlining is inherently even better suited than italic type for the purpose of showing emphasis. Linguists need not go along with the prejudice against underlining but should instead point out how to do it advantageously.

The eyes of some silent readers are distracted, if not offended, by underlining or by any apostrophe outside of a genitive case-form such as *Churchill's* or *the fireman's*. But the ear, if only the mind's ear, is entitled to as much respect, or more. *What's done is done* should not be written out *what is done is done*, because the latter has ceased to be a real phonetic alternative and could only be a pointless, ill-chosen archaism. On the other hand it is still legitimate to write *The treasurer showed what is necessary*, even in preference to writing *what's necessary*; here the more formal variant can still be used without awkwardness in speech, and *a fortiori* in writing.

An amusing instance of pedantry in the avoidance of contractions can be seen on the façade of the National Archives in Washington. Shakespeare's fine words "What's past is prologue" (*Tempest* 2.1.253) are carved in stone but with the meter spoiled: WHAT IS PAST IS PROLOGUE. To inscribe WHAT'S with an apostrophe would have been like inscribing the year in Arabic rather than Roman numerals.

The worst consequence of such unthinking adherence to an outdated rule is that some texts, meant for reading aloud by an official or a politician, sound like the language of a lifeless robot. When the speaker ought to be enlisting the active good will

of the audience, his sincerity is undermined by the untoward use of *let us*: *Let us work harder, Let us share what we have, Let us send help to the victims of the flood.* In all ordinary speech the cohortative is *let's*; *us* is merely etymological, and *let us* means something quite different: 'don't stop us,' an outright imperative. While we readily understand the lingering archaism *let us* in a cohortative sense, it detracts from the urgency of the appeal.

Only in the formula *Let us pray* is it quite suitable; and there, I am afraid, it is suitable because we expect insincerity. Or, to put it more charitably, public prayer is such a highly formal holdover from a more religious age that *Let's pray*, with its up-to-date ring, would jar the congregation out of a praying mood -- as some recent versions of the Bible in plain English sound as if God were speaking from a parking lot, not from Mount Sinai long ago or Solomon's temple. But imagine, if you can, some people genuinely anxious about their lives or their livelihood: they would not say *Let us pray* but *Let's pray for a safe landing* or *Let's pray for a good crop.*

Perhaps I am the first to attack the mannerism of pronouncing the Arabic digits 100 as *one hundred*, instead of a *hundred* -- and likewise *one thousand*, *one million*, *one billion*, and the fractions *one half*, *one third*, etc. Until recently *one hundred* was not used routinely but only to reinforce a contrast with *two hundred* or some other multiple, or after a number in the thousands, like *twelve thousand one hundred*. If an amount had mistakenly been given as *seven hundred twenty-five*, you would say by way of correction *one hundred twenty-five*, but otherwise a *hundred twenty-five*. I suspect that the unnecessary preference for *one hundred* began with some teachers of arithmetic or their professors in teachers' college; it smacks of the American educational establishment. My own children picked it up in our local school.

The original motive can be surmised, though not documented. Since the digital Arabic notation has suggested the possibility of leaving out the word *hundred* and pronouncing *one-twenty-five*, *seven-twenty-five* or even *one-two-five*, *seven-two-five*, teachers have thought to counter this temptation by emphasizing that the digit 1 in that position stands not just implicitly but expressly for *one hundred*. But they say *one hundred* not only when they are reading an Arabic number aloud but even in the midst of conversation, as though a *hundred* were lost from their vocabulary. When they have occasion to write it spelled out, as on a check, they make it *one hundred*. The preoccupations of pedagogy in an arithmetic class have outweighed all other experience with this little piece of the English language. I am not willing to let it go on unchallenged. The distinction between the number *one* and the indefinite article, which originated as the unstressed alternant of *one*, is well worth preserving. The school curriculum ought to make room for the fine point of literacy that 100 is pronounced a *hundred* and 1/3 pronounced a *third*, not *one hundred* or *one third* unless emphasis is required.

The problem is akin to spelling pronunciation, or any unwarranted subservience to the conventional written form of the language. Now writing is bound to affect speech, all the more in a heavily literate society. The influence can be stopped even less than that of a foreign language with which many speakers of English are in contact. But at best it can be controlled to some extent, although the eye is independent and masterful: it knows for sure whatever it has learned, and it likes to dictate to the ear, unless the ear stands up for its rights. Language and music are the age-old realm of hearing. The question now is whether we can remember what we have heard, in spite of interference from what we see.

I am talking about cases whose outcome is still open. When something that was rooted in misjudgement or ineptitude has become customary, trying to undo it is seldom worth the effort. Any word that communicates smoothly, without misunderstanding, is better than one that would ideally be more accurate but might leave some people baffled or confused. The time is long past when the word *author* got established in English with a *-th-* spelling due to a false Hellenizing etymology, and consequently with a fricative pronunciation of the consonant. The mistake in spelling went back to medieval Latin with an inadequate smattering of Greek, which was reinforced in the Renaissance. It is too late to protest; restoring something in English closer to the classical Latin *auctor* would now be chimerical. Only for a very specific scholarly purpose does the principle of intrinsic correctness prevail. A new edition of an Elizabethan poet, if it sets out to recapture the sound of his verses as much as possible, can reasonably choose the most authentic spellings from the early editions, and certainly exclude any subsequent spellings that misrepresent his sounds.

Where current usage is divided, a thoughtful choice is more worthy of a scholar than mere adherence to a certain school. Though I am an American, I would not automatically follow American spelling to the exclusion of British spelling. I write *judgement* with an *e*, like *judge*. The British usually do it that way nowadays, and I side with them here because it makes sense: it accords with a simple rule, whereas omission of the *e* entails a gratuitous complication. Even when I expect my composition to be read only by Americans, I spell *judgement* with the *e*. Exposure to a better spelling than they are used to, can do them no harm. If they pause to think about it, if it pricks or upsets -- however slightly -- their exaggerated notion of uniformity in spelling, they will have gained a little. Suppose, at the extreme, a barely literate reader encountering my spelling of *judgement* for the first time: still it should not disconcert him; for it is perfectly regular.

For individuals able to think independently and to understand what is involved, reason ought to carry more weight than the various national conventions of spelling. It is misplaced loyalty for American scholars to stick to American spellings regardless. The English language is a heritage that we share with many nations. It is not the American language. The legislature of Tennessee,

around the same time as it prohibited the teaching of Darwinian evolution, also passed a law that the language of the state should be known as American; but that patriotic measure, without arousing controversy, failed through its own futility. As Richard Wood remarks in our present Forum, Illinois had a similar law. Probably other states did too, but to no avail.

The Canadians -- among them our hosts and colleagues at this gathering -- can set an example of rational independence. You need not settle upon this or that feature of English just to be different, as the Americans and the British have sometimes done. Being so much in contact both with the States and with Great Britain, you are naturally alert to the existing differences and free to work out a wise policy. You make up your own minds about far more momentous things. So I wish that linguists and other educators in Canada, besides their understandable concentration upon bilingualism, would give the Anglophone world the benefit also of a Canadian perspective, neither British nor American, upon the English language. I am particularly glad to see on our program G. A. Tilly's paper on Canadian English.

The great advantage of uniform spelling, or of standardization in any aspect of language or in instruments generally, is that once it has been achieved, you can take it for granted and without misgivings use the instrument for its purpose. So standard spelling eases all written communication. But because of the natural variability and the history of languages, complete uniformity has never been achieved in English or any language that I know. The remaining differences sometimes get codified in rival standards, which block any further progress toward intelligent unification. Professional linguists ought to draw attention to the debatable points on the edge of standard English usage, and recommend whatever seems to them preferable. Although they should obviously listen to one another, a consensus (as I said earlier) can scarcely be expected.

A comprehensive view might, for example, help eventually to get past the awkwardness due to the encroachment of *they*, *their*, *them* for indefinite reference. Karen Eberly's paper on this subject is on the program of this LACUS Forum. After *everyone*, *someone*, *anyone*, or *no one* a singular reference sounds forced, unless the context invites us to visualize one man: If I hang up the telephone and say to you *Someone wants his money back*, you understand that a man called, not a woman. But if I point and say *Look, someone left his keys*, you may wonder what makes me think it was a man. Is it because no women had been there? Or because the key-chain looks like a man's style? Unless some such intimation is intended, I had better say *Someone left their keys*. *His or her keys* is logical but stiff: it has the precision of a legal document; it is not like people talking. The possessive *their* has come to be widely used where *his* is too definite or too individual.

The whole expansion began with the virtual plural *everyone* or *everybody*. It was long ago settled, in practice, that a subsequent sentence will have *they*, not *he*: *Everyone is leaving. They know what has happened.* Within the same clause a singular refer-

ence is still tolerable: *if everyone pays his dues or if everyone pays their dues*. The circumstance that *every* requires the verb to be singular scarcely determines that a pronoun afterwards must also be singular. For *every* has the odd property of nullifying the effect of a compound subject upon the verb: *The officials, the stockholders, and every employee and customer was notified*. (— *were notified* would be the most pedantic mistake.) But if the sentence goes on to a pronoun reference, that will be plural: *The officials, the stockholders, and every employee and customer was notified of their rights*.

Special rules of agreement, which appear to clash with an external, schematic logic, turn up in many languages. The rules that hold for English are fairly subtle, and in part contradicted by orthoepists striving for an elusive consistency. In the long run the *Sprachgefühl* of well educated people will prevail, although editors in the meanwhile make the public usage of English conform more or less to what they have learned from their handbooks. Linguists with a broad understanding can do a little to enlighten the present editors, and more to enlighten the future editors and teachers among their students.

The goal in this, as I see it, is not to win the educated community over to someone's predetermined solution, but to dispel the impediments to a solution that is slowly emerging from experience. It will be much more comfortable when we, or rather our successors, can use the pronouns that come natural. The present dilemmas are taxing, as we are advised to look around for a paraphrase that avoids breaking anyone's rule or offending anyone's sensibility. A new element in the last few years is the effort to eliminate sex bias in language. The Department of Commerce and the Employment Service in the Department of Labor have gone so far as to banish many ordinary words from their official publications; e.g., *repairman, draftsman, fireman, watchman, fisherman, switchman, camera man*. Some feminists are campaigning to remove all such words from new editions of school books. This kind of social engineering, through control over the language, is bold but unlikely to have much success: it depends on not only capturing but holding on to a centralized, bureaucratic power of indoctrination.

Since standard English is used primarily for careful writing and prepared speeches, it can bear the encumbrance of a great many "do's" and "don't's." While drafting and revising, you can choose words that will get your message across with a minimum of adverse reaction. Rhetoric has always catered to various people's likes and dislikes. But it sometimes comes about that the constraints upon availing yourself of the resources of the language are too far-reaching and too fussy; they make your output labored, heavy, insipid. Then it will fail to give the impression of good sense, and others will not open their minds to it.

That is how the communicative purpose of language can be defeated. So it is worthwhile to keep the English language, which we must use, from getting tied in knots. It is no longer being nourished by a lot of lively and often intelligent conversation

in drawing rooms or coffee houses, nor by copious letter-writing to friends and relatives. Daily exposure to the talk shows and news broadcasts on television is a weak substitute for actively cultivating good English ourselves. I don't want to be, as Horace said, a *laudator temporis acti*, harking back wistfully to the beauties of the eighteenth or nineteenth century, as though all subsequent changes had made the language worse. On the contrary, we can take some satisfaction in the quantitative growth of the population that speaks and reads English; and there is another modest and overlooked advantage that I have called to your attention today: Linguistics has made real progress, and that could redound to the benefit of the language which the linguists know best.

- **INAUGURAL ADDRESS**

GENETIC LINGUISTICS TODAY:
SOME SCIENTIFIC ASPECTS

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Let me first express my great pleasure at being here to inaugurate this year's sessions of LACUS. It is a matter of great pride to me to have been selected for this honor. LACUS is a growing organization that clearly meets a need felt in the linguistics community.

Let me at the same time express the hope that as linguistics expands, the tendency toward the formation of schools will dissipate. In this view I am Bloomfieldian as I am in some other views. Bloomfield was opposed to the formation of schools. He was devoted to the science of linguistics and in science there are, or should be, no schools.

Of course not all linguists can be expected to accept the same assumptions about natural language or the way to study it. Assumptions are, as everyone knows, propositions which are basic and which are not subject to argument. Naturally enough, there is little that human beings love to argue about more than assumptions.

Bloomfield was the first to formulate a set of postulates for linguistics. Postulates are assumptions. He not only formulated postulates for descriptive linguistics -- or analytical linguistics, as I would prefer to call it now -- but also formulated a set of historical assumptions. These historical assumptions concerned the important -- or at least it used to be -- field of linguistics which concerns the past of languages.

The name of this field has varied. It has been called by some historical linguistics. Because in many cases the past of a language could not be known from texts, but only through comparison with related languages, the field was named by others comparative linguistics, or historical-comparative linguistics. Since essentially this field deals with how languages came to be the way they are, the term genetic linguistics seems to be more appropriate. This new name has the advantage of permitting the easy inclusion of such obviously genetic studies as internal reconstruction and inferences about events between recorded stages

of a language.

In 1930, just over 50 years ago, Bloomfield addressed the Modern Language Association on the subject of "Linguistics as a Science." He stressed his faith in the future of linguistics and expected it to be "one of the main sectors of scientific advance," a prophecy which has been fulfilled. He also expected linguistics to be a sector in which science would "then win through to the understanding and control of human conduct." This prophecy has yet to be fulfilled. Linguistics has yet to show us a way to prevent an atomic war except perhaps in one way. No program of prevention can be formulated without the use of language.

In developing his view of linguistics as a science he directed his fire at finalists and mentalists. Finalists use teleologic formulations. "Teleology is a form of wording which says that things happen because there is a tendency for them to happen. Water seeks its own level; nature abhors a vacuum; trees strive toward the light. Men do things because they 'want' or 'choose' or have a tendency to do them."

Mentalists use animism to explain things like the savage who "explains a thunderstorm by saying that an invisible manlike being directs the tempest. The Thunderer or Thunderbird is unseen, but his presence is convincingly manifest in the thunder and lightning. The savage is only doubling this absurdity when he applies his explanation to the acts of animals and persons by saying that inside the palpable and visible animal or person there lurks an impalpable and invisible double which somehow controls the former's actions...Where we deal with man we have not progressed beyond the animistic view. In spite of the fact that the measured outcome of human activity (as, say, in lifting weights or in a metabolism test) never conflicts with the physical conditions, we insist that within each man and yet not as a part of his body there exists an invisible, supra-physical double, a 'soul', a 'spirit', 'mind', 'will', 'consciousness' or what not, which determines the actions of man...This invisible double is not subject to the regular sequences of events which science has found in the rest of the universe. Accounting with magic ease for anything and everything that may happen, animism obscures every problem and drugs us into accepting our ignorance and helplessness in the face of human conduct."

He goes on to claim that one can strip teleologic and animistic verbiage from any linguistic treatise and the effect is only an improvement in style.

He presents the hypothesis that language is the peculiar factor in man which forbids our explaining his actions on the ordinary plane of biology and that this factor is a "highly specialized and unstable biological complex."

It seems almost inevitable now that there is a biological factor in human language. Our experiences with the training of animals in the use of language-like communication all seem to stress the gulf that separates animal communication from human language. The inability of our nearest biological relatives to break into human language underlines the immense qualitative step made in constructing human language on a phonemic basis. The capacity to grasp this basis is built into the human and lacking in other primates.

It is this phonemic basis which permitted the immense expansion of the number of signals into what we know as human language. It is not at all surprising to realize that any one of our languages is an infinitely expansible system. This attribute accounts for the relatively great ease with which any of the known languages can be adapted to deal with a completely new culture, an ease that can only be realized fully when compared to the discomfort of the human beings who speak the language, but must be introduced to the newfangled vocabulary needed to effect the change.

That language is a biological complex appears in another way, in the generally recognized fact that the complicated operations of language, encoding and decoding, must be represented in the organization of impulse routes in the brain to allow for the great speed with which these two processes are carried out.

That a language is unstable is a characteristic well-known to linguists. Wherever data for a diachronic language is available, that language is shown to be a changing entity. That it should be, is a natural consequence of its composition and the manner of its transmission.

A dialectological language is composed of some finite number of contemporaneous idiolects. These idiolects -- no two of which are exactly alike -- constitute a chain of pairs in which the pairs have a relation like that of mutual intelligibility. The term dialectological language is awkward. I have avoided using Hockett's L-complex (Hockett 1958.324), not only because essentially it is just as awkward, but precisely because his usage hides the central relationship between a language and a dialect. I regard his L-simplex as a special case of his L-complex rather than the reverse. A dialectological language in which all idiolects are mutually intelligible with each other is a constrained dialectological language. Perhaps we will find it convenient to have a new term like hololect to replace both Hockett's L-complex

and my dialectological language.

I say that the criterion for the pairs in a hololect is "like that of mutual intelligibility" because of the difficulties that surround mutual intelligibility as a criterion. Mutual intelligibility has the advantage of being closely associated with the chief function of language, that of communication. In order to understand the difficulty with this criterion, we must consider the population to which it is to be applied. The problem is the same as the language limit problem.

Dialect studies are generally carried out in terms of word distributions. It is easy to see that isoglosses can be constructed (a) for a pair of forms with the same meaning or (b) for a pair of cognate forms with different meanings. The criterion for association of different dialects in the same language must be free from geographical considerations, if for no other reason, to take into account the mobility of the individual. Nevertheless isoglosses, even if freed from geography, are ill-suited to the purpose of language discrimination. The criterion itself must be entirely non-concrete, that is purely linguistic. We will inevitably wish to consider the language capability of each individual as a simultaneous unchanging totality despite the fact that no individual can spew forth in any short time the totality of his language capability and despite the fact that in any case the speech of every individual is subject to change at any moment through learning. Thus an idiolect is a fiction consisting of the totality of an individual's potential in one language at a particular time. We assume that an individual's total language capability can be spread over some number of dialectological languages.

If an idiolect is a fiction, how can we test it? In much the same way as we might test a computer, by its output. In the case of a computer, we can examine the wiring as well; in the case of an idiolect this is, with some exceptions, forbidden and the routing can only be inferred. It is generally easy enough, with some care, to see whether two idiolects are mutually intelligible from the behavior of the individuals involved. To be sure bilinguals must be somehow accounted for, for no one is prepared to assign, say, English and Chinese to the same language.

At its most acute, the problem of distinguishing dialectological languages in terms of mutual intelligibility becomes that of defining the critical minimum of mutual intelligibility required for assigning two idiolects to the same language. This critical minimum is the language limit, lying on the point just above zero mutual intelligibility. Any lesser amount of mutual intelligibility than the language limit would make a pair of idiolects candidates for being assigned to different languages.

It might make everybody happy if we simply set the language limit at zero as the point toward which differentiating idiolects are tending as they approach becoming mutually unintelligible. One could immediately think of a single word as the smallest element in intelligibility, but this number seems clearly to be too small for what we want as a criterion. It is not difficult to imagine that now or in the immediate future a word like "atom" or "bomb" might be a language universal.

The most common criticism of mutual intelligibility as a determinant focuses on the practical problem of distinguishing between natural acquisition and learning. Some different idiolects can be brought to converge through contacts of very short duration, say one or two days. A theoretical approach would not be concerned with the time it would take for mutual intelligibility to be established. Rather the concern for theory would be whether mutual intelligibility would be established at all under natural circumstances.

The function of the language limit in the logical structure of genetic linguistics is not merely to make dialectological languages enumerable, but rather to establish a degree of difference between idiolects such that if it is exceeded so as to destroy a chain, the chain can never be naturally reestablished. The importance of this function was seen by Meillet, who realized that the inferential power of the comparative method depended on the fact that once idiolects had acquired the degree of independence which would lead to assigning them to different languages, their respective succeeding idiolects should never again be assignable to the same language (1921.83).

But if one item of vocabulary is insufficient, how many would be enough? Modern languages are now set on a convergence course that makes any specific number of items for such a purpose chancy. Contact between people tends to bring about adaptations among those involved and this induces convergence among speakers of different dialects through borrowing whether these belong to the same language or not.

Incidentally the rate of communication by language per individual is probably increasing because of the expansion in the use of mass media. What is also increasing is the rate of intercommunication among native speakers of different dialects. Since the mobility of the individual is increasing and his mobility brings him increasingly more frequently into communicative contact with speakers of varied origin, the individual's adaptations are much more varied. This factor coupled with the fantastic improvements in the transmission and reproduction of communication has set the world languages into competition with each other, a competition which can be expected only to intensify the elimination contest among them and place the world on a track which inevitably will lead to a common world language.

But we are not there yet. There are different languages, even if we have no consistent way of distinguishing them. A vocabulary list is insufficient for this purpose. Swadesh arbitrarily set a language limit for the use of his list in determining language relationship. It has however been demonstrated that the correlation between lexicostatistical percentages and mutual intelligibility is rather weak. Presumably phonological differences are the chief other factor that weakens the correlation. But this point remains to be demonstrated.

To save the mutual intelligibility criterion one might think of adding the criterion that the mutual intelligibility criterion must somehow involve the grammatical features of the idiolects. This seemed to me to be a satisfactory formulation until rather recently when I suddenly realized that the Dutch question "Wat is het?" ("What is it?") would probably be immediately intelligible to an English speaker and that the question does involve common grammatical features of the different idiolects. I am not yet prepared to admit that Dutch and English belong to the same dialectological language and I expect that others would share this hesitation.

I firmly believe nevertheless that a proper, satisfactory criterion can be developed and that this development will take mutual intelligibility as a prime component with some additional constraints. I believe furthermore that work in this area is worth while.

The fact that linguists are having trouble with specifying the criterion for a dialectological language need not be disturbing. A dialectological language is the linguistic analog of a biological species. Some biologists are willing to go along with the notion of using the criterion of fertile births for membership in the same species, but others offer objections of varying degrees of seriousness. In any case they appear not to take into account the logical function of species determination which appears to be to establish a criterion for species which would prevent their rejoining under natural conditions. This function plays a significant role in the reconstruction of past speciations.

It is quite interesting to read the words of one of Bloomfield's greatest admirers -- I consider myself a lesser member of the same group, much smaller than it should be -- who says: "Students of human conduct sometimes search for 'laws of history.' There are none (his italics - I.D.) -- except the basic laws of physics which, by definition, are never violated by human action or by any other sort of event" (Hockett 1973.282). I am not sure what Bloomfield would have said about this. The cited author to be sure is here trying to help us to avoid metaphysical teleological traps, but at the same time he has overstated the case, for there is at least one law of history which the cited author observes and utilizes -- whether or not he subscribes to it --

and that is the law of the regularity of phonetic change.

I am uncomfortable with the last term in this formulation. The use of the term sound change rather than phonetic change is no improvement. A more precise formulation is necessary and I have suggested speaking of topophonic change rather than phonetic change (Dyen 1969:501f.). Here a topophone is an allophone or a transition between allophones or between an allophone and pause in either order.

Since topophones are conditioned by their environment, their changes necessarily conform to the requirements of "the regularity of phonetic change." It follows that the regularity involved can now be called the law of topophonic change.

This law was effectively first recognized and adhered to by the Neo-Grammarians and constitutes their greatest contribution to the theory of linguistic genetics or, if you prefer, to genetic linguistics. A careful reading of their discussions shows that they did not offer it as a pure theory and later scholars and perhaps they themselves did not separate the theory from what they regarded as good practice in comparatism. It was their failure to do so that led to confusion, objection and the citation of counter-cases.

It is not unlikely that some of this confusion was due to their chief interest, which was to defend and promote rigorous adherence in comparative work to the regularity of sound laws, that is, to what Meillet called "la constance des lois phonétiques" (1912:465). This rigor was fruitful and the power of their method has perhaps never been better illustrated than by the recent conversion of Labov to a recognition and understanding of the Neo-Grammarians' contribution (cf. Labov 1981).

The Neo-Grammarians and their followers were perhaps distracted by their dazzling success with systematic correspondences. As all linguists recognize, their phonetic laws were not laws in the same sense as physical laws. They were and are particular relations between the phonemes of words of related languages which are regarded as cognate precisely because of these relations. The cognates do not condition each other and are independently produced so that if any law is involved it must be one that has produced the cognates independently of each other.

The Neo-Grammarians' failure to present their finding as a theory and the consequences of this failure illustrate the importance of theory in science in general and in linguistics in particular. Theory, wrong or right, is our formulation of how things behave. There are those among the linguists who are opposed to purely theoretical articles and to them I wish to apologize for the extent to which my presentation will perturb them. I have a certain sympathy for their position, as did

Bloomfield, who nevertheless seems to have given just such a presentation in the paper mentioned above. There should be room for discussions of the import of well-known data and their theoretical interpretation where the facts are not in dispute.

The conception that lies behind the practice of the Neo-Grammarians is the pure theory that the phonemic sequences in linguistic forms that have persisted in a diachronic language can be mapped from the phonemic sequences of the precursor linguistic forms of any earlier stage. This theory formulated as a law, is not essentially different from a physical law that relates prior and later states. At the same time this law is a law of history and a law of human conduct. It is difficult to see how one might regard a diachronic language as a non-historical event or one that is not part of the totality of human conduct.

What has obscured the status of this law is the compulsion that linguists have felt to take into account the other factors in linguistic change such as analogy and dialect borrowing. Topophonic change is not the only factor in linguistic change, and it affects only inherited material. Words which are subject to topophonic change are also subject to other factors for change. The justification for recognizing the law of topophonic change as for any law is the incontrovertible evidence of its operation.

Let me call the law of topophonic change the TC law. The TC law is itself associated with another law which I will call the law of dialect cohesion or the DC law. All dialects of the same language have a significant amount of corresponding meaning-forms. A meaning-form is a meaningful morpheme sequence together with its meaning. The phonemes of corresponding meaning-forms are members of a system of correspondences. Perhaps some people would prefer to use the term "rule" or "system of rules" instead of the term "system of correspondences". The term "rule" in this instance is not illuminating since we wish to view all dialects as equal; "rules" force the choice of a starting-point to achieve a simplicity", but lose here by introducing artificiality. In effect they achieve at best a brevity of statement, but pay for it with a distortion of the facts.

"Rules" are appropriate in stating the relation between inherited forms and their etyma. This is only to be expected, since we are dealing with a regularity expressed as a mapping relation. The difference here is that these rules -- unlike the rules of a generative grammar or a system of correspondences -- actually formulate true hypotheses regarding linguistic change.

Some scholars have found that the TC law was one of the great mysteries of linguistics. I remember Adelaide Hahn commenting that "we may never know why it is that phonemes change regularly." Yet it is quite evident that if different lines of transmission are to maintain a system of correspondences between

their meaning-forms, the only way this can be accomplished is by having those same meaning-forms in a mapping relation from their respective starting points which themselves -- identical or not -- are in a systematic correspondential relation with each other.

In effect then the law of dialect cohesion lies behind the TC law. This is perhaps not surprising in view of the necessary postulate that all linguistic change originates from the appearance of dialect features. A dialect feature is any feature non-universally distributed in a dialectological language. On its appearance a dialect feature increases dialect variation. Linguistic change begins as dialect variation.

The law of dialect cohesion is in general not entailed by the criterion of a dialectological language. That criterion is mutual intelligibility somehow qualified. That mutual intelligibility can occur without dialect cohesion is illustrated by the story of "Ladle Rat Rotten Hut" which is intelligible to some English speakers without benefit of a system of correspondences. In passing I should note that this point is not illustrated by foreign speech, since the foreign speaker tends to substitute for the imitated phonemes systematically.

The DC and TC laws apply to a biological complex, language, and do so because it is transmitted socially. There are many analogs between the consequences of this social transmission and those of biological transmission in the animal world. I have presented some of these analogs in an article entitled "Creolization in Genetic Theory" which will some day be published. I will not go into these analogs here because of the limitations of time.

Another law is the law of linguistic differentiation. This law states that different lines of transmission, that is, different linealities, tend to approximate and differentiate according to the rate of communication between their speakers. As different dialect speakers are thrown together, idiolects tend to become similar and as they do not communicate with each other -- that is, as their rate of communication approaches or reaches zero -- their idiolects tend to diverge. This happens, if for no other reason, because they are communicating with other speakers with a different idiolect. This law of differentiation can be regarded as a form of entropy in which acts of communication tend to maintain and strengthen the organization within the speech community by moving it toward homogeneity, whereas the absence of such acts reduces the organization of the speech community by moving it toward heterogeneity. The law of differentiation thus formulates the instability of language and permits us to postulate a maintaining rate of communication at which there is no change. Furthermore it permits us to predict that at zero rate of communication the rate of differentiation is a constant for all heterolinguistic pairs. (The degree to which this pre-

diction will need to be modified to account for random convergence is probably not very significant.)

To be sure we have here entered the field of speculation, but I believe that this intuitive expression represents the sense of other comparatists. Obviously the rate of differentiation between linealities is constrained by the necessity of free communication between the generations that make up a lineality. Furthermore it is hard to see how this constant of language differentiation at zero communication rate could hold unless there was an inherent factor in the rate of linguistic change within a lineality that remained, despite any variation, close to a constant. The actual apparent rate might of course vary from the inherent rate associated with this factor when other factors are present.

The inherent rate of linguistic change appears under conditions of normal transmission. There are other factors that are involved in transmission. Any social disturbance can affect the observed rate of linguistic change. For example, it is not inconceivable that a conquest of one group by another where the winners and losers speak different dialects will affect the apparent rate of linguistic change in all of the linealities involved, speeding that rate up and at the same time producing convergent effects through the increase of acts of communication between newly brought together linealities. Similarly, rapid cultural changes can produce excessively rapid changes in cultural vocabulary.

I am reminded here of the problems that paleontologists face in dealing with the proposal of different rates in speciation formulated in the theory of "punctuated equilibrium." This theory is reported to hold that most species remain basically the same for long periods of time and then develop into new species through sudden bursts of biological change caused by such events as shifts in environments, behavior patterns, or species distribution. This theory is opposed to the gradualist theory which stems from Darwin.

Perhaps there is a basic instability in species as in languages which of and by itself under proper conditions of isolation will lead to the differentiation of species at a regular rate, but that shifts in environment and other factors can speed up or perhaps even slow up the rate at which the basic instability within a species tends to produce intra-species differentiation, regarded as a constant factor for the differentiation of species.¹ Such a separation of factors is powerful enough to allow for sudden spurts or even apparent slowing up as part of a scenario of change of which a constant basic rate is a part.

It follows that the changes which bring about the formation of creolized dialects should be regarded as special cases in which

the apparent rate of linguistic change is much faster than the anticipated inherent rate. The socio-cultural changes that are associated with the formation of creolized dialects can be regarded as the cause of the difference between the apparent rate and the inherent rate.

The laws that we deal with here concern languages as spoken by native speakers. We are not here concerned with secondarily learned languages whether they be languages that are foreign for the speaker or pidgins. Likewise we are not concerned with the relation between a creolized language like Takitaki or Neo-Melanesian and the languages that gave them birth. The scope of our concern is natural languages as spoken by native speakers.

The inherent rate of linguistic change is what appears under normal circumstances within a lineality. A lineality consists of successive generations of speakers traced in each case of a new speaker back to the greatest contributor or contributors to his idiolect. Obviously this is not an easy thing to do and I am not suggesting that anyone try to do the tracing, but such contributors must exist. What is lacking is the metric. And we add that the reason the metric is lacking is because the social need for such a metric is not pressing. This however does not mean that its theoretical existence need be denied since that can be treated as axiomatic on the grounds that it fits with our intuitions. A somewhat stretched analog would be the Euclidean definition of a straight line as the shortest distance between two points.

Although the social need for such a metric is not pressing, the theoretical function of such a metric is very great. Some practical justification for premising such a metric appears in the regular rate of replacement in the vocabulary. The regular rate of replacement in basic vocabulary proposed by Morris Swadesh in the late forties and formulated as a law can now be regarded as a facet of a more general law applying at least to referential or contentive meaning-forms.

In the discussion of linguistic change a great many factors appear to govern the probability that a word may be replaced for a given meaning. The term lability is useful as a technical term for the probability that a word will be replaced for a given meaning.

Frequency is clearly an important factor in lability. Obviously there is a strong tendency for most words to continue in their frequency simply because predominantly the frequency of the meanings with which they are associated tend to be constant in their frequency. One must of course remember that we are now regarding the events of an entire dialectological language.

It would only be natural to conclude that words of high fre-

quency have a low lability whereas words of low frequency have a high lability. Back of this statement lies the recognition that there is at least one partly synonymous expression for every referential term. The definition of a referential term is itself such a synonymous expression.

Synonymous terms and expressions divide the frequency of a meaning among themselves and compete for the totality of occurrences of that meaning. This competition permits other factors than the simple frequency of a term to govern the lability of that term completely.

Obviously however, terms highly frequent for a given meaning are less likely to lose their total frequency rapidly than terms of low frequency. One must however add that this tendency is less likely to hold when a term carries a factor of colorfulness with it. Slang and other colorful terms are stylish and stylistically favored, but this very factor dooms most of such terms to an early loss of frequency to a new colorful term. Colorful terms show rapid rises and falls in frequency because the factor of colorfulness itself, unlike other meanings, can be associated with a given term for only a short time. To be sure in some cases the colorfulness impetus can be expected to be enough to permit a colorful word to seize the frequency of a meaning predominantly and maintain it so that even after losing its colorfulness factor, the formerly colorful word acquires the frequency of an earlier frequent word for that meaning and the earlier word may even then disappear. It is not unusual however for colorful terms to succeed each other in incessant rises and falls, ever-changing, but not necessarily penetrating permanently the realm of the non-colorful words.

We are all familiar with the fact that the TC law can make words too short, and can produce homonyms that require disambiguation, both conditions that affect the lability of terms. Lability can also depend on the workings of taboo and competitions set up by intimate or prestige-seeking borrowing. These factors, no matter how interesting, are generally local and particular events which are best regarded as factors effecting change in a language that are separate from the inherent lability of referential terms. If we discount the sometimes wide-ranging changes that can be produced in certain periods by social and cultural changes, we see a pattern of small changes in frequencies that are most naturally associated with the large numbers that characterize language events.

In forming his basic vocabulary list, Swadesh was taking advantage of this kind of language behavior. His basic vocabulary list was in fact a list of meanings or a gloss list. It actually involved highly frequent meanings. Furthermore, the user of the list was required to select the most frequent term among competitors for each of the meanings in the list. It is of little con-

sequence that he did not restrict the entries to referential terms. It is not at all clear to me how non-referential terms behave. Some seem to behave more like referential terms, whereas others seem to be even more resistant to replacement than referential terms. By and large however the Swadesh list has referential meanings.

The use of the Swadesh list brought forth a strong reaction from traditional comparatists who labored under many illusions, and, in some cases, delusions. With the surge of transformationalism the importance of language classification and the enticing prospect of a glottochronology receded as the traditional comparatists have sought in different ways to accommodate to the new situation. It seems safe to say that rewrite rules have offered little to genetic linguistics that pertains to the heart of the matter. The emphasis on so-called theory rather than careful examination of data has in some cases resulted in backward steps, and clearly the introduction of mentalistic and teleological terminology has led to misconceptions which have hindered many among the younger scholars.

The usefulness of the Swadesh list in the classification of the Austronesian family has gone unquestioned. Not that all scholars accept all of the results obtained by this procedure. I don't myself. At the same time its results have proved a more useful guide than the simple intuitions of the more knowledgeable reporters on which we have had to rely. There is every reason to believe that a consistent application of lexicostatistical classification would be valuable in every field, even where it does not give the final result. After all, all that can be expected from it is a preliminary hypothesis which can compete with other hypotheses. I believe that on the whole hypotheses based on lexicostatistic have competed well.

In considering whether lexicostatistical glottochronology can be successful, we must first recognize that there is no other glottochronology without records. Where there are no records, the usual case, our only resort to establish historical hypotheses for a people is their language. Sometimes, of course, archaeological data can be of use, but this use is limited to those instances when we can safely associate the artifacts with a language group. Otherwise it is probably safer to use non-language terms in connection with hypotheses concerning the history of artifacts.

In connection with the utility of lexicostatistics in glottochronology I have a little agreement to mention. I am not at all sure how accurate lexicostatistics are to be regarded for glottochronology. I feel sure that a lot of work in this field remains to be done and that for those who are interested in the human past, this work will be rewarding.

However that may be, I published, as some of you may remember, a lexicostatistical classification of the Austronesian languages in 1965, and there gave 27.7% as the percentage relating the Polynesian Subfamily with the most closely related non-Polynesian language groups. Now 27.7% implies 3080 years of divergence and suggests that the Polynesians, on the assumption of a sharp break associated with an emigration, separated from their most immediate Austronesian relatives about 1000 B.C. Recently Roger Green of the University of Auckland has fixed 1200 B. C. as the earliest date of the lapita pottery associated with Polynesians in the Tongan Islands (1979.33). Polynesians are believed to be the first settlers of these islands.

This glottochronological success may be shortlived. But it can hardly be regarded now as contraindicating the usefulness of lexicostatistical glottochronology. Curiously enough the earliest divisions among the Polynesians would be dated much later by lexicostatistics, more nearly from the period around 200 B.C. This date suggests that the Polynesians stuck together for some time without communicative interruption. This interpretation is not necessarily in conflict with the fact that Green has another lapita site in Western Samoa at about 1000 B. C. Just how all of these data are to be reconciled remains to be seen; the reconciliation itself may help clarify ways in which lexicostatistical percentages can be used for glottochronology.

In any case the Swadesh list can be viewed as an application based on a law that the rate of replacement of referential terms like that of basic vocabulary is in some way regular. This law is speculative but in any case could only be seen as operative if we introduce the notion that this law is not the only factor in vocabulary change. There are other factors like those that we mentioned above.

The suggestion in the preceding discussion that meaning can be regarded as invariant for the purposes of the investigation of linguistic change has the disadvantage of appearing artificial, certainly to those who are involved in the teaching of European languages like English, French, German, etc. One can reasonably raise the question as to whether the meaning realm covered by these languages, which includes the terminology of the sciences such as physics, astronomy, geology, biology, linguistic, economics, sociology, psychology, etc. as well as the highly developed use of language in the art forms such as poetry, drama, the novel, etc. can be regarded in any sense as the same as the meaning realm of, let us say, the language of the Australian aborigine or uneducated black African. The physical world is ob-

jectively the same for both, but the systems of reference appear to differ on a grand scale.

However there are certain reasons for disregarding the difference in size between language vocabularies. One reason is the equal potentiality of natural languages relative to culture. Any natural language can be expanded in a relatively short time to assume all the cultural functions of any other language. This is of course an assumption, but in fact the history of the nineteenth and twentieth centuries is full of examples of the rapid expansion of vocabularies to meet new cultural needs.

One could argue that potentiality is not fact, but it seems to me that the assumption expresses an essential characteristic of our natural languages. The difference in vocabulary size is, as it were, a temporary inhibition of the expansive powers of a language because of the separation of its culture from the centers of rapid cultural evolution. From a practical point of view there is no other way of dealing with the meaning realm except in terms of the vocabulary associated with it. Consequently it is reasonable to regard the meaning-realm as the same for all languages despite the fact that there is a difference in vocabulary size.

There appear to be good reasons to regard all languages as equally complex. We can reasonably assume that the children of all groups approach their respective languages with the same average capacity for acquisition. This assumption implies that the average rate of language acquisition in all groups should be the same if the complexity of the languages to be acquired is the same. Here language complexity could be regarded as identical with resistance to being acquired. Now I believe that no one has yet studied the rate of first language acquisition for different languages, but I doubt that I will be regarded as daring if I propose that the age of acquisition is the same for all languages. It was not too long ago that some of the most prominent linguists in the world were claiming that by the age of five a child has become proficient in the phonology and grammar of his language. I would not insist on the particular age, but it is clear that these men were actually formulating their experience as fitting with the proposition that all languages are equally complex.

To be sure, if all languages are equally complex, one could agree that they are all equally simple. But there are reasons for believing that entropy in languages tends to increase, that is that languages are tending to become less organized. It is easy to point to the well-known effects of topophonic change which tends to promote morphophonemic alternation. It seems reasonable to regard the increase of morphophonemic alternation as an increase in complexity. One must recognize at the same time that complexity is also reduced by topophonic change in the form

of mergers and assimilations. Reductions in phonemic inventory are reductions in complexity as are the simplifications of complex phonemic sequences by assimilation. At the same time increases in phonemic inventory are increases in complexity.

A regularizing counterforce to disorganizing effects of topophonic change is analogical change. Analogical change has often been regarded as a simplifying reaction to the complicating effects of topophonic change. In fact it is the type of change that lies behind an inestimably large number of transformations. Since topophonic change is generally regarded as occurring below the level of consciousness whereas analogical change, which by its nature requires the presence of a model, can hardly be so regarded, the primacy of the complicating factor is assured.

It should be noted that analogical change can also be shown on occasion to increase complexity by increasing membership in small classes as in the case of the transfer of the Old English weak verb werian to the strong verb class in New English wear-wore. But such events are presumably the rarer type.

There are thus two major factors at work in the history of a language, each of which can increase complexity and reduce complexity. But whatever they do, a language is always at the extreme of tolerable complexity. The law of the equal complexity of languages presents each language as in a state of dynamic equilibrium in which the complexity is tending to increase but the speakers manage to keep the complexity within tolerable limits, so that the children can acquire enough of it in time to behave appropriately in their society.

The law of the equicomplexity of languages thus conjures up the intriguing, and perhaps also ironic, picture of man, regardless of his language, deeply engaged in a never-ending sub-surface struggle to keep his language within bounds. He is always successful, but despite his success, his language continues relentlessly to press him toward the limit of his capacity, sometimes even using his own struggles in the process, but never quite succeeding in pushing past his limit. Man's limitations constitute an insurpassable barrier to the pressure for freedom innate in his own creation, language, the creation that made him man.

This view of language and the laws that apply to it suggests that the development of a metric to deal with the complexity could be of the greatest theoretical importance. Of course, if it could be proved that such a metric was impossible, we would be the gainers since we could then know that such a view as the one developed here is fruitless. On the other hand if such a metric could be developed, the theoretical advantages seem to be exceptionally great and it is not impossible that practical applications would follow.

A side benefit could be the fact that the child's acquisition of a language might be seen more clearly as a recapitulation of early man's struggle toward speech. We can surmise that the critical point in acquisition is the child's recognition of the phonemic principle. This should occur fairly early in a normal child's development if we take into account the fact that even fairly strongly retarded children show at least some grasp of it.

The problem of a metric for language complexity can be described as essentially a three-language problem. One cannot know whether a metric based on two languages will work for a third. To be sure we can not be certain that a metric that works for three languages would work for a fourth, but we can say that it would be surprising if it did not. Obviously the greater the amount of independence between the three languages selected, the greater the probability that the metric would apply to the fourth language.

The two components of the metric are the phonology and the grammar. We know at least partially the phonological dimensions. There is the phonemic inventory and the distributions of the phonemes. At the same time we do not know how to deal with the relation between the phonemes and their specific distributions. Here it would appear that careful consideration of various possibilities is necessary.

In respect to the grammar it may help to divide the grammar into (1) alternations and (2) tactics. These two divisions behave differently in relation to complexity.

Alternations occur in various types, all of which increase complexity. Even compulsory alternations can be regarded as more complex than no alternation. Their increase in complexity is however compensated for at least in part by a decrease in complexity in the phoneme distributions. On the other hand suppletive alternations must be regarded as strongly complicating elements.

Tactics deals with the arrangements of morphemes. It helps to realize that only the so-called "productive" parts of tactics need to be considered. To be sure the division between what is productive and what is non-productive may not be sharp. One need only recognize that in principle any non-productive arrangement can become productive and might be in the process of becoming so at the time of investigation. Nevertheless ambiguous instances should not prove to be a burdensome problem and can probably be dealt with when the need arises.

It is interesting to me, at any rate, that the search for a metric would assign a purpose to transformations and phrase-structures. This search requires that the grammar of a language be put in its simplest form, a form that could be acquired inductively and as a matter of habit in something less than a de-

cade by a developing brain.

But perhaps most intriguing is the apparent possibility that phonological features can be made commensurable with grammatical features. Just how this is to be accomplished, if it can be, remains to be seen. It is perhaps the most interesting prospect as well as an essential component of a language metric. For what it does is to predict that formal linguistic changes are inter-compensatory. Of course it must be realized that intercompensatory changes need not be directly related. At the same time, of course, they may be. All that is required is that the total complexity should not change.

One startling implication of the law of equicomplexity concerns so-called isolating languages like Chinese when compared with so-called polysynthetic languages like Sanskrit. Equicomplexity requires that in some way the simple morphological structure of Chinese have a compensatory complexity elsewhere to match the complexity of the morphological structure of Sanskrit. If we assume that the phonemic structures are about equally complex, the area to seek balancing differences of complexity would, it seems, be in the syntax.

At the 12th International Congress of Linguists in Vienna, a Russian contributor presented a paper in which he pointed out the inverse relation between word length and phonemic inventory to be found in Chinese and Polynesian. Chinese has a relatively large phonemic inventory and a high frequency of words of one syllable among contentives whereas the Polynesian languages have very small phonemic inventories and a relatively low frequency of words of one syllable among contentives. This inverse relation can be viewed as a balancing of the complexity in phonemic inventory by a simplicity in word-structure in Chinese and the reverse in Polynesian.

Naturally this example is too simplistic since it does not touch grammar. What it does show, without proving it, is that there can be an interdependence between different parts of the structure of a language. This interdependence seems to me to be intimately bound up with a language metric and the proposed law of the equicomplexity of languages. Investigation in this field may very well demonstrate that in a new sense each language constitutes, as Meillet thought de Saussure had already demonstrated, "un système ou tout se tient" (Meillet 1912.463).

Footnote

1. The kind of change suggested here seems to be identical with the "microevolutionary processes" regarded by G. L. Stebbins and F. J. Ayala as "compatible with the two models of macroevolution -- punctualism and gradualism" (p. 971) in their article Is a New Evolutionary Synthesis Necessary? (*Science* 213.967-971 [Aug. 28, 1981]).

BIBLIOGRAPHY

- L. Bloomfield. 1926. A set of postulates for the science of language. Language 2.153-164.
- L. Bloomfield. 1930. Linguistics as a science. In C. F. Hockett ed. 1970. A Bloomfield Anthology. Bloomington.
- I. Dyen. 1963. Why phonetic change is regular. Language 39.631-7.
- I. Dyen. 1969. Reconstruction, the comparative method, and the proto-language uniformity assumption. Language 45.499-518.
- R. C. Green. 1979. Lapita. Pp. 27-60. In J.D. Jennings, ed. The Prehistory of Polynesia. Cambridge.
- C. F. Hockett. 1958. A Course in Modern Linguistics. New York.
- C. F. Hockett. 1973. Man's Place in Nature. New York.
- W. Labov. 1981. Resolving the Neogrammarian controversy. Language 267-308.
- A. Meillet. 1912. Introduction à l'étude comparative des langues indo-européennes. Paris.
- A. Meillet. 1921. Linguistique historique et linguistique générale. Paris.

SPECIAL INVITED LECTURE

THE GOALS OF LINGUISTIC THEORY AND APPLICATIVE GRAMMAR

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1. On the Goals of Linguistic Theory

Observing natural languages makes obvious the many differences among them; not only are the genetically unrelated languages, like English and Chinese, very dissimilar, but languages that have a common origin, like English and German, also differ from one another in many important ways. And yet, one can also discover important similarities among languages. Thus, the grammar of every language includes a system of obligatory syntactic functions. For instance, not every language differentiates between noun-phrases and verb-phrases, but every language must differentiate between the two basic components of a sentence: predicates and their terms.

On the other hand, although languages may vary greatly one from another, the possibilities of variation among languages are not unlimited: there are regular patterns of variation among languages which are limited by intrinsic functional and structural properties of signs. For instance, languages may vary in word order patterns, but these patterns can be reduced to a limited number of types determined by the intrinsic linearity of sign sequences in human speech. Language typology is possible only because there are functional and structural constraints on possible differences among languages.

Linguistic similarities and differences seem to be determined by some unknown factors which constitute the essence of natural languages. Therefore linguistic similarities and differences must be recognized as significant phenomena which provide clues to the understanding of what a natural language is. These phenomena must be explained in terms of principles that account for the essence of natural languages.

The basic question of linguistic theory must be:

What are the factors that contribute to the similarities and differences in natural languages?

To answer this question linguistic theory must achieve the following goals:

First, it must state linguistic universals, that is principles that are considered true of the grammar of every possible natural language.

Second, it must state principles of possible variations among languages, that is principles that characterize the interrelation of language types.

Third, it must be able to explain facts of individual lan-

guages, that is to subsume these facts under classes of phenomena characterized by the principles it has stated.

Fourth, it must provide conceptual and formal tools for constructing explanatory grammars of typologically different individual languages.

2. The Basic Claim of Applicative Grammar

The basic claim of Applicative Grammar (henceforth AG) is that an abstract system of linguistic operators called the genotype language is needed to achieve the goals of linguistic theory. (Operators are combined by means of a binary operation called application; hence the term Applicative Grammar.)

Cross-linguistic generalizations in terms of the genotype language make it possible to claim that what at first may appear to be disparate phenomena in different languages are in reality instances of the same phenomenon, and, vice versa, what at first may appear to be instances of the same phenomenon are in reality very different phenomena.

The genotype language makes it possible to uncover an identical structure underlying language-particular constructions in different languages. For instance, relative clauses are so different in typologically different languages that in order to form a cross-linguistic generalization about what is the same in relative clauses in a variety of different languages, we must define heterogeneous and incommensurate language-particular phenomena in terms of homogeneous and commensurable objects—linguistic operators. Due to the genotype language relative clauses in different languages are seen to have the same structure: a combination of a clause with an operator transposing this clause into a modifier of a term. By uncovering the same structure underlying seemingly disparate phenomena in different languages AG explains these phenomena as instances of the same operators, theoretical constructs providing insights into the essence of natural languages.

3. The Syntactic Representation of Sentence Structure

Syntactic representations in AG are given in terms of the notions operator, operand, resultant, and application.

An operator is any kind of linguistic device which acts on one or more expressions called its operands to form an expression called its resultant. For example, in the English expression the hunter killed the bear the word killed is an operator that acts on its operands the hunter and the bear; in gray car the expression gray is an operator that acts on its operand car. If an operator has one operand, it is called a one-place operator, if an operator has n operands it is called an n-place operator.

It is important to notice that in accordance with the defini-

tion of the operator as a linguistic device instances of an operator do not have to be only concrete expressions, like words or morphemes. For instance, a predicate may be represented by intonation. So, in the following verse from a poem by the Russian poet A. Blok

Noč'. Ulica. Fonar'. Apteka.
'Night. Street. Lantern. Pharmacy.'

we have four sentences. In each of these sentences the intonation serves as an operator which acts on a term to form a sentence.

Another example of an operator which is not a concrete expression is a truncation. For instance, bel 'is white' in the Russian sentence Sneg bel 'The snow is white' is the resultant of the truncation of the suffix -yj in the word bel-yj 'white'. Here the truncation serves as an operator which acts on the adjective bel-yj to form the predicate bel 'is white'.

In terms of the notions operator, operand, resultant and primitives term and sentence I define the formal concepts one-place predicate, two-place predicate, three-place predicate and the formal concepts primary term, secondary term, tertiary term.

Definition 1. If X is an operator which acts on a term Y to form a sentence Z, then X is a one-place predicate and Y is a primary term.

Definition 2. If X is an operator which acts on a term Y to form a one-place predicate Z, then X is a two-place predicate and Y is a secondary term.

Definition 3. If X is an operator which acts on a term Y to form a two-place predicate Z, then X is a three-place predicate and Y is a tertiary term.

The opposition of a primary and a secondary term constitutes the nucleus of a sentence. These terms I call nuclear.

It follows from the Definitions 1-2 that primary terms occur both in the opposition primary term:secondary term (with two-place predicates) and outside this opposition (with one-place predicates). Therefore, the position with a one-place predicate must be regarded as the point of the neutralization of the opposition primary term:secondary term which is represented by the primary term in this position. The primary term is the neutral-negative (unmarked) member and the secondary term is the positive (marked) member of this opposition.

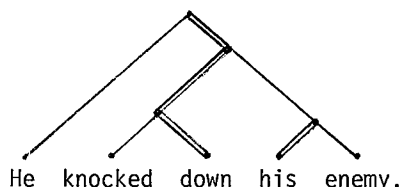
As will be shown in Section 4, such notions as subject, direct object cannot be considered universal concepts. They are appropriate for accusative languages but break down when applied to ergative languages. In order to understand syntactic processes in ergative languages, these processes must be accounted for in terms of the formal notions of AG primary term and second-

dary term rather than in terms of subject and direct object. I will argue that in accusative languages the formal notion primary term must be interpreted as subject and the formal notion secondary term, as direct object; in ergative languages primary term must be interpreted as the syntactic function absolutive and secondary term, as syntactic function ergative. (The syntactic functions absolutive and ergative must be distinguished from the morphological cases absolutive and ergative.)

Let us focus on the operation of the combination of the operator with its operands. According to the definition of this operation in ordinary logic an n-place operator combines with its operands in one step. This definition treats all operands as if they have equally close connection with their operator. But usually an operator is more closely connected with one operand than another. For example, a transitive verb is more closely connected with the secondary term (interpreted as object in accusative languages) than with the primary term (interpreted as subject in accusative languages). Thus, in the above example the hunter killed the bear the transitive predicate killed is more closely connected with the bear than with the hunter. To do justice to this phenomenon, we must redefine the combination of n-place operator with its operands as a series of binary operations: an n-place operator is applied to its first operand, then the resultant to the second operand, and so on. According to the new definition an n-place operator combines with its operands in n steps rather than in one step as in ordinary logic. For example, any transitive predicate, which is a two-place operator, must be applied to the secondary term, then the resultant to the primary term. Thus, in the above example transitive predicate killed must be applied first to the bear, then to the hunter: ((killed the bear) the hunter). The new binary operation called application is used in combinatory logic.

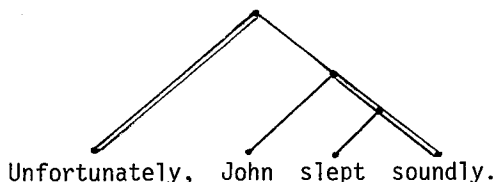
An applicative tree (henceforth AT) is a network of operators and operands combined by application. The sentence He knocked down his enemy may be presented by the following applicative tree:

(1)

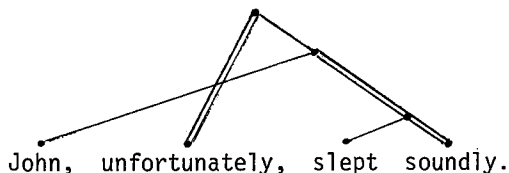


AT (1) differs from the familiar constituency tree in that operators are represented by double lines and operands are represented by single lines. An AT presents relation operator:operand independently of the linear word order, as can be seen from the following example:

(2)



(3)



ATs (2) and (3) are equivalent from the relational point of view.

Any AT may be replaced with an equivalent linear formula with brackets. In the linear notation, by a convention, an operator must precede its operand, and both are put inside brackets.

(4) (((DOWN KNOCKED)(HIS ENEMY))HE)

(5) (UNFORTUNATELY((SOUNDLY SLEPT)JOHN))

Formula (4) replaces AT (1). Formula (5) replaces ATs (2) and (3) since it is invariant under the changes of word order.

In a linear formula the brackets can be left out in accordance with the principle of leftward grouping. Applying this convention to the above linear formulae we get:

(6) ((DOWN KNOCKED)(HIS ENEMY))HE

(7) UNFORTUNATELY((SOUNDLY SLEPT)JOHN)

4. Understanding Cross-Linguistic Generalizations

A detailed discussion of the formal aspects of AG is outside the scope of the present paper. A complete presentation of the formal apparatus of AG is given in Shaumyan, 1977. Here I will consider an example of how AG can contribute to the understanding of cross-linguistic generalizations.

AG uses the notions of primary term, secondary term, tertiary term as theoretical constructs rather than the notions of subject, direct object, indirect object. One of the basic claims of AG is that grammatical relations such as subject of, direct object of, indirect object of are not valid universal linguistic categories.

It is interesting to compare this claim with the assumption

of Relational Grammar proposed by David M. Perlmutter and Paul M. Postal (Perlmutter and Postal, 1977), Arc Pair Grammar which is a completely different version of Relational Grammar developed by David E. Johnson and Paul M. Postal (Johnson and Postal, 1980), and Transformational Grammar.

However Relational Grammar and Arc Pair Grammar may differ, they share the basic claim that grammatical relations such as subject of, direct object of, indirect object of must be taken as primitives of linguistic theory. The assumption implied by this claim is that the notions of subject, direct object, indirect object are universal linguistic categories and must therefore be realized in the grammar of every natural language.

Transformational Grammar also regards subject of, direct object of and indirect object of as universal concepts but it defines them rather than takes them as primitives (Chomsky, 1965: 71).

No matter whether subject of, direct object of, indirect object of are defined or taken as primitives, the major theoretical problem is whether or not these notions are valid universal categories.

I regard the claim of AG and the assumption of Relational Grammar, Arc Pair Grammar and Transformational Grammar as alternative hypotheses concerning an essential aspect of natural languages. In order to test these hypotheses, I will examine the Keenan-Comrie Accessibility Hierarchy (Keenan, Comrie, 1977).

In an important study of relative clause formation strategy Edward L. Keenan and Bernard Comrie established an Accessibility Hierarchy which characterizes the relative accessibility to relative clause formation of various members of a sentence. In terms of the Accessibility Hierarchy they state universal constraints on relative clause formation. According to the Accessibility Hierarchy processes of relative clause formation are sensitive to the following hierarchy of grammatical relations:

Subject > Direct object > Indirect object > Oblique NP >
> Possessor > Object of comparison

where > means 'more accessible than'.

The positions on the Accessibility Hierarchy are to be understood as specifying a set of possible relativizations that a language may make: relativizations that apply at some point of the hierarchy must apply at any higher point. The Accessibility Hierarchy predicts, for instance, that there is no language which can relativize possessors and subjects, but not direct objects and oblique NPs.

In terms of the Accessibility Hierarchy Keenan and Comrie state the following universal constraints on relative clause formation:

The Hierarchy Constraints

1. A language must be able to relativize subjects.
2. Any relative clause forming strategy must apply to a continuous segment of the Accessibility Hierarchy.
3. Strategies that apply at one point of the Accessibility Hierarchy may in principle cease to apply at any lower point.

Constraint (1) states that the grammar of any language must allow relativization on subjects. For instance, no language can relativize only locatives or direct objects. Constraint (2) says that a language is free to treat the adjacent positions as the same, but it cannot skip positions. For example, if a given strategy can apply to both subjects and locatives, it must also apply to direct objects and indirect objects. Constraint (3) says that each point of the Accessibility Hierarchy can be a cut-off point for any strategy that applies to a higher point.

Here are some examples of the data that support the Hierarchy Constraints (Keenan, Comrie, 1977: 69-75).

Subjects only. Many Malayo-Polynesian languages (for example, Malagasy, Javanese, Iban, Toba-Batak) allow relativization only on subjects. Looking at Malagasy the major relative clause formation process basically is this: the head NP is placed to the left, followed optionally by an invariable relativizer *izay*, followed by the restricting clause. Notice that to relativize a direct object, the sentence is first passivized so that direct object becomes a subject:

- (8) a. Nahita ny vehivavy ny mpianatra.
saw the woman the student
'The student saw the woman.'
- b. ny mpianatra izay nahita ny vehivavy
the student that saw the woman
'the student that saw the woman'
- c. *ny vehivavy izay nahita ny mpianatra
the woman that saw the student
'the woman that the student saw'
- d. Nohitan' ny mpianatra ny vehivavy.
seen(passive) the student the woman
'The woman was seen by the student.'
- e. ny vehivavy izay nohitan'ny mpianatra
the woman that seen the student
'the woman that was seen by the student'

Subject-Direct Object. Some languages, for example, Welsh or Finnish, allow relativization only on subjects and direct objects. Finnish places the relative clause prenominaly, uses no relativization marker, and puts the subordinate verb in a non-finite form. Here is an example from Finnish:

- (9) a. Pöydällä tanssinut poika oli sairas.
 on-table having-danced boy was sick
 'The boy who had danced on the table was sick.'
- b. Näkemäni poika tanssi pöydällä.
 I-having-seen boy danced on-table
 'The boy that I saw danced on the table.'

Further examples (Subject-Indirect Object, Subject-Oblique, Subject-Genitive, Subject-Object of Comparison) can be found in the above paper by Keenan and Comrie.

The Accessibility Hierarchy excludes the possibility of languages where subjects are less accessible to relativization than objects. Yet this is precisely the case with Dyirbal and Mayan languages, if we identify ergatives with transitive subjects and absolutes with intransitive subjects and direct objects, as is done in Relational grammar (and in Arc Pair grammar). That is, these facts undermine the status of the Accessibility Hierarchy as a universal law.

In his important study of ergativity David E. Johnson gives this definition (Johnson, 1976: 2):

A language is said to be absolute/ergative (or simply, ergative) if some of its rules treat <subjects of intransitive clauses (SUI)> and <direct objects (DO)> alike in some manner to the exclusion of <subjects of transitive clauses (SUT)>. In contrast, a language is said to be a nominalative/accusative language if its rules identify <subjects of intransitive clauses> and <subjects of transitive clauses> as opposed to <direct objects>.

If we accept this definition of ergativity and apply it to Dyirbal and Mayan languages, we will see that the data from these languages conflict with the Accessibility Hierarchy.

Dyirbal does not allow relativization on ergative subjects; instead, the verb of the relative clause is intransitivized by adding the suffix *-nay*, and the subject is put into the absolute case (Dixon, 1972: 100). For instance, consider the Dyirbal sentence

- (10) yabu ŋuma+ŋgu bura+n
 MOTHER(abs) FATHER+ERG SEE+PAST
 'Father saw mother'

In sentence (10) the ergative subject is marked by *-ngu*. In order to be embedded to another sentence as a relative clause, sentence (10) must be antipassivized and ergative *ŋuma+ŋgu* replaced by absolute *ŋuma+Ø*. We may get, for example, the sentence

- (11) ŋuma+Ø [bural+ŋa+ŋu+Ø yabu+gu] dungara+nʷu
 father+ABS see+ANTIPASS+REL+ABS mother+DAT cry+PAST
 'Father, who saw mother, was crying.'

The features of Dyirbal under discussion here conform closely to those of Mayan grammar. So, in the languages of the Kanjobalan, Mamean and Quichean subgroups, ergative NPs may not as a rule be relativized (nor questioned or focused), while absolutive NPs can. In order for an ergative NP to undergo relativization, it must be converted into derived absolutive and the verb intransitivized through the addition of a special intransitivizing suffix. Here is an example of this process in Aguacatec (Larsen and Norman, 1979).

- (12) ja Ø-Ø-b'iy yaaɟ xna7n
asp. 3sB-3sA-HIT MAN WOMAN
'the man hit the woman'
- (13) a. na7 m-Ø-b'iy-oon xna7n
WHO dep.asp.-3sB-HIT-suffix WOMAN
'who hit the woman?'
- b. ja Ø-w-il yaaɟ ye m-Ø-b'iy-oon xna7n
asp. 3sB-1sA-SEE MAN THE dep.asp.-3sB-HIT-suffix WOMAN
'I saw the man who hit the woman'
- c. yaaɟ m-Ø-b'iy-oon xna7n
MAN dep.asp.-3sB-HIT-suffix WOMAN
'it was the man who hit the woman'

Here -oon is the intransitivizing suffix used to circumvent the constraints on extraction of ergatives (the term extraction rules is a cover term for relativization rules, focus rules, WH-Question).

We see that the facts of Dyirbal and Mayan languages present strong evidence against the Accessibility Hierarchy. Does it mean that the Accessibility Hierarchy must be abandoned as a universal law? I do not think so. The trouble with the Accessibility Hierarchy is that it is formulated as a universal law in non-universal terms, such as subject, direct object, etc. To solve the difficulty, it is necessary to abandon non-universal concepts, such as subject and direct object, and replace them by truly universal concepts. The key to the solution of this difficulty is provided by AG.

Our first step is to split the Accessibility Hierarchy into two hierarchies: one for accusative languages and one for ergative languages.

- 1) Subject > Direct object > Indirect object > ...
- 2) Absolutive > Ergative > Indirect object > ...

Here the terms ergative and absolutive mean syntactic functions distinct from syntactic functions subject and object rather than morphological cases.

Many ergative languages permit both ergative and absolutive NPs to relativize. But this does not undermine the distinct Accessibility Hierarchy for ergative languages. The crucial fact

is that there are accusative languages that relativize only subjects, but there are no ergative languages that relativize only ergatives. On the other hand, there are ergative languages, like Dyirbal and Mayan languages, that relativize only absolutes.

Our second step is to collapse both hierarchies into an abstract Accessibility Hierarchy which reflects their isomorphism:

Primary term > Secondary term > Tertiary term > ...

We see that the confusion of ergatives with transitive subjects is inconsistent with the Accessibility Hierarchy; which creates an unresolvable difficulty. The treatment of ergatives and transitive subjects as different syntactic functions, on the other hand, leads to a deeper understanding of the Accessibility Hierarchy, which results in its restatement on an abstract level in keeping with true basic syntactic universals: primary, secondary, tertiary terms.

In order to vindicate the claim of AG that ergative and absolutive are syntactic functions, I must also consider the notion of ergativity.

I have to discuss the claim that the only difference between the majority of ergative languages and accusative languages is in their morphology. For instance, in one of the most important contributions to the study of ergativity Stephen R. Anderson adduces that on the basis of rules such as Equi-NP deletion and Subject raising embedded intransitive and transitive subjects are no more distinguished in Basque, an ergative language, than in English, an accusative language, and that subjects and direct objects are discriminated in both languages alike. Anderson concludes: "Rules such as those we have been considering, when investigated in virtually any ergative language point unambiguously in the direction we have indicated. They show that is, that from a syntactic point of view these languages are organized in the same way as are accusative languages, and that the basically syntactic notion of 'subject' has essentially the same reference in both language types (Anderson, 1976: 16)." Anderson admits that Dyirbal is different from accusative languages with respect to its syntax, but regards it as an insignificant anomaly. He writes: "Dyirbal, which as noted differs fundamentally from usual type, is in fact the exception which proves the rule (Anderson, 1976: 23)."

To investigate the notion 'subject' in ergative languages, Anderson examines the application of rules such as Equi-NP deletion and Subject raising in these languages. Anderson claims that the particular class of NPs in ergative languages—the absolutes in intransitive and the ergatives in transitive constructions—to which the rules in question apply constitute exactly the syntactic class denoted by the term 'subject' in the accusative languages. Anderson concludes that the notion 'subject' is the same in most ergative and accusative languages and therefore most ergative languages do not differ in their syntax from accusative languages, the only difference between them being "a com-

paratively trivial fact about morphology (Anderson, 1976: 17)".

A close examination of the relevant facts shows that in reality the two classes of NPs in the accusative and ergative languages are very different and therefore the term 'subject' is inappropriate to the class of NPs in the ergative languages. To see this, let us turn to Anderson's analysis. It cannot be denied that in most ergative languages, with respect to the application of Equi and Subject raising, ergatives are similar to transitive subjects of accusative languages. But does this similarity justify the generalization that in ergative languages the NPs to which Equi and Subject raising apply belong to the class of subjects?

To answer this question, we must bear in mind that the subject is a cluster concept, that is a concept that is characterized by a set of properties rather than by a single property. The application of Equi and Subject raising is not sufficient criterion for determining the class of subjects. Among other criteria there is at least one that is crucial for characterizing the class of subjects. I mean the fundamental Criterion of the Non-Omissibility of the Subject. A non-subject may be eliminated from a sentence, which will still remain a complete sentence. But this is normally not true of the subject. For instance,

- (14) a. Peter sells fruit (for a living).
 b. Peter sells (for a living).
 c. *Sells fruit (for a living).

The Criterion of the Non-Omissibility of the Subject is so important that some linguists consider it a single essential feature for the formal characterization of the subject (Martinet, 1975: 219-224). This criterion is high on Keenan's Subject Properties List (Keenan, 1976: 313; Keenan uses the term 'indispensability' instead of 'non-omissibility').

The Criterion of the Non-Omissibility of the Subject excludes the possibility of languages where subjects could be eliminated from sentences. Yet this is precisely the case with ergative languages, if we identify ergatives with transitive subjects and absolutes with intransitive subjects in intransitive constructions and with transitive objects in transitive constructions. In many ergative languages we can normally eliminate ergatives but we cannot eliminate absolutes from transitive constructions. Here is an example from Tongan (Churchward, 1953: 69):

- (15) a. 'Oku taki 'e Siale 'a Mele.
 'Charlie' leads Mary.'
 b. 'Oku taki 'a Mele.
 'Leads Mary. (Mary is led.)'

'e Siale in (15a) is an ergative. It is omitted in (15b) which is a normal way of expressing in Tongan what we express in English by means of a passive verb (Tongan does not have passive).

Notice that in accusative languages the opposition subject: direct object is normally correlated with the opposition active voice: passive voice, while ergative languages normally do not have the opposition active voice: passive voice. This has significant consequences. In order to compensate for the lack of the passive, ergative languages use omission of ergatives as a normal syntactic procedure or use focus rules which make it possible to impart prominence to any member of a sentence (in this case either an absolutive or an ergative may correspond to a subject in an accusative language). Here is an example of the application of focus rules in Tongan (Churchward, 1953: 67):

- (16) a. Na'e tāmāte'i 'e Tēvita 'a Kōlaiate.
'David killed Goliath.'
b. Na'e tāmāte'i 'a Kōlaiate 'e Tēvita.
'It was Goliath whom David killed.'

Sentence (16a) corresponds to David killed Goliath in English, while (16b) corresponds to It was Goliath whom David killed. The focus rule gives prominence to the noun which immediately follows the verb, that is to 'e Tēvita in (16a) and to 'a Kōlaiate in (16b).

In Tongan, as in many other ergative languages, we are faced with a serious difficulty resulting from the following contradiction: if the class of subjects is characterized by the application of Equi and Subject raising, then ergatives are subjects in transitive constructions and absolutes are subjects in intransitive constructions; but if the class of subjects is characterized by the Criterion of the Non-Omissibility of the Subject, then only absolutes can be subjects in transitive constructions.

Since we cannot dispense with either of these criteria, this creates contradiction in defining the essential properties of the subject. Both of these criteria are recognized as necessary to the definition of subject and at the same time they stand in contradiction to consistent definition of subject.

To solve this difficulty, we must recognize that ergative and absolutive cannot be defined in terms of subject and object but rather that these are distinct primitive syntactic functions.

Since the terms 'ergative' and 'absolutive' are already used for the designation of morphological cases, I introduce special symbols with superscripts which will be used when ambiguity might arise as to whether syntactic functions or morphological cases are meant: ERG^f means the syntactic function 'ergative', while ERG^c means the morphological case 'ergative'. Similarly, ABS^f and ABS^c .

We cannot agree with Anderson that the notion 'subject' is the same in English and in most ergative languages, simply because ergative languages have neither subjects nor objects. They have syntactic functions 'ergative' and 'absolutive' which are quite different from syntactic functions 'subject' and 'object' in English.

We can now formulate the Correspondence Hypothesis:

The morphological opposition of case markings $ERG^C:ABS^C$ corresponds to the syntactic opposition $ERG^f:ABS^f$, which is independent of syntactic opposition subject:object in accusative languages.

The symbols ERG^C and ABS^C are generalized designations of case markings. So ERG^C may designate not only an ergative case morpheme but any oblique case morpheme, say a Dative or Instrumental, or a class of morphemes which are in a complementary distribution as case markings of ergative.

Let us now consider the syntactic oppositions ergative:absolutive and subject:object more closely.

Both these oppositions can be neutralized. Thus ergatives and absolutes contrast only as arguments of two-place predicates. The point of neutralization is the NP position in a one-place predicate where only an absolute occurs. Since in the point of neutralization an absolute replaces the opposition ergative:absolutive, it can function either as an ergative or as an absolute, that is, semantically, it may denote either an agent (the meaning of an ergative) or a patient (the meaning of an absolute in a two-place predicate).

The absolute is a neutral-negative (unmarked) member of the syntactic opposition ergative:absolutive and the ergative is a positive (marked) member of this opposition. This may be represented by the following diagram:

(17)



Subjects and objects contrast only as arguments of two-place predicates. The point of neutralization is the NP position in a one-place predicate where only a subject occurs. Since in the point of neutralization a subject replaces the opposition subject:object, it can function either as a subject or as an object, that is, semantically, it may denote either an agent (the meaning of transitive subject) or a patient (the meaning of an object).

The subject is a neutral-negative (unmarked) member of syntactic opposition subject:object and the object is a positive (marked) member of this opposition. This may be represented by the following diagram:

(18)



We come up with the opposition unmarked term:marked term. On the basis of this opposition we establish the following correspondence between terms in ergative and accusative constructions.

<u>Opposition of markedness</u>	<u>Ergative construction</u>	<u>Accusative construction</u>
Unmarked term	Absolutive	Subject
Marked term	Ergative	Object

Examples of the neutralization of syntactic oppositions in English:

- (19) a. John sells automobiles.
 b. John dances well.
 c. Automobiles sell well.
 d. Automobiles are sold.

In (19a), which is a transitive construction, the transitive subject John is an agent, and the transitive object automobiles is a patient. In the intransitive constructions a subject denotes either an agent, in (19b), or a patient, in (19c) and (19d).

Examples of the neutralization of syntactic oppositions in Tongan:

- (20) a. Na'e inu 'a e kava 'e Sione.
 Past drink Abs. the kava Erg. John
 'John drank the kava.'
 b. Na'e inu 'a Sione.
 Past drink Abs. John
 'John drank.'
 c. Na'e lea 'a Tolu.
 Past speak Abs. Tolu
 'Tolu spoke.'
 d. Na'e 'uheina 'a e ngoué.
 Past rain Abs. the garden
 'The garden was rained upon.'

In (20a) ergative 'e Sione denotes an agent and absolutive 'a e kava denotes a patient. In (20b) the transitive inu is used as an intransitive verb; therefore here we have absolutive 'a Sione instead of ergative 'e Sione. In (20c) absolutive 'a Tolu denotes an agent. In (20d) absolutive 'a e ngoué denotes a patient.

We can now formulate a law which I call the Law of Duality:

The marked term of an ergative construction corresponds to the unmarked term of an accusative construction, and the unmarked term of an ergative construction corresponds to the marked term of an accusative construction; and vice versa, the marked term of an accusative construction corre-

sponds to the unmarked term of an ergative construction, and the unmarked term of an accusative construction corresponds to the marked term of an ergative construction.

An accusative construction and an ergative construction will be called duals of each other.

The Law of Duality means that accusative and ergative constructions relate to each other as mirror images. The marked and unmarked terms in accusative and ergative constructions are polar categories, like, for example, positive and negative electric charges; a correspondence of unmarked terms to marked terms and of marked terms to unmarked terms may be compared to what physicists call 'charge conjugation', a change of all plus charges to minus and all minus to plus.

The proposed Law of Duality also reminds one of laws of duality in projective geometry and mathematical logic. For example, in logic duals are formed by changing alternation to conjunction in a formula and vice versa.

One important consequence of the Law of Duality is that the opposition of voices in ergative languages is a mirror image of the opposition of voices in accusative languages: the basic voice in ergative languages corresponds to the derived voice in accusative languages, and the derived voice in ergative languages corresponds to the basic voice in accusative languages.

Since in accusative languages the basic voice is active and the derived voice is passive, this means that pure ergative languages cannot have a passive voice in the sense of accusative languages. Rather pure ergative languages can have a voice which is converse in its effect to the passive of accusative languages—so-called antipassive.

A mixed ergative language can have the passive voice only as a part of its accusative subsystem.

What sometimes is called the passive voice in ergative languages cannot be regarded as the true passive from a syntactic point of view.

Consider the following example from Georgian:

- (21) a. Kali da - i - xat - a student-ma
 woman(Abs.) perfective for paint Past student Erg.
 prefix himself
 'The student painted the woman for himself.'
- b. Kali da - i - xat - a student-is mier.
 woman(Abs.) perfective passive- paint Past student by
 prefix ness
 'The woman was painted by the student.'

It is clear that (21a) has the meaning of the active and (21b) has the meaning of the passive. But the difference in meaning between (21a) and (21b) does not involve the change of the predicate structure—rather the predicate remains unchanged. Actually, depending on context, the version prefix -i- in da-i-

xat-a signifies either 'for himself' or a passive relation. The latter meaning must be explained as a secondary function of this prefix. This difference is semantic rather than syntactic. Since the difference in meaning between the two constructions is determined only by the two different ways of presenting the agent, (21b) cannot be considered a passive construction from a syntactic point of view. This type of constructions I call quasi-passive constructions. Quasi-passive constructions occur in Basque and some other ergative languages (cf. Tchekhoff, 1978: 179-182).

With respect to the opposition primary term:secondary term, it is important to notice the following. Some syntactic rules in many ergative languages require for their statement reference to both the ergative and the absolutive, but not to all absolutives —rather only to those appearing in intransitive clauses. In consequence, one may wonder whether the opposition primary term:secondary term breaks down with respect to these rules.

The important thing to consider is that only primary terms may appear in intransitive clauses. Since the position in an intransitive clause is the point of neutralization of the opposition primary term:secondary term, the primary term in this position may have the syntactic function of a primary term, of a secondary term, or of both. So, three possibilities are open: 1) primary terms in intransitive clauses are identified only with primary terms in transitive clauses; 2) primary terms in intransitive clauses are identified only with secondary terms in transitive clauses; 3) primary terms in intransitive clauses are identified both with primary and secondary terms in transitive clauses. All these possibilities are realized in ergative languages: 1) the syntactic rules in question are stated with reference to only absolutives in intransitive and transitive clauses (Dyirbal); 2) the syntactic rules in question are stated with reference to absolutives in intransitive clauses and ergatives in transitive clauses (Georgian); 3) the syntactic rules in question are stated with reference to absolutives in intransitive clauses and to absolutives and ergatives in transitive clauses (Archi, a Daghestan language; Kibrik, 1979: 71-72).

The Law of Duality is valid in phonology, as well. Consider, for instance, the opposition d:t in Russian and the opposition d:t in Danish. On the surface both these oppositions are the same. But, as a matter of fact, the Russian d:t is a case of the opposition Voiced:Voiceless and the Danish d:t is a case of the opposition Lax:Tense.

In Danish the neutralization of the opposition d:t results in d which may represent either d or t. So, d is neutral-negative (unmarked) member of the opposition d:t and t is positive (marked) member of this opposition. This may be represented by the diagram:



In Russian the neutralization of the opposition d:t results in t which may represent either d or t. So, t is a neutral-negative (unmarked) member of the opposition d:t and d is a positive (marked) member of this opposition. This may be represented by the diagram:



We come up with the opposition unmarked term:marked term in phonology. On the basis of this opposition we establish the following correspondence between members of the oppositions Lax: Tense and Voiced:Voiceless.

Opposition of markedness	Lax:Tense	Voiced:Voiceless
Unmarked phoneme	d	t
Marked phoneme	t	d

Now we can apply the Law of Duality in Phonology:

The marked term of the opposition Lax:Tense corresponds to the unmarked term of the opposition Voiced:Voiceless, and the unmarked term of the opposition Lax:Tense corresponds to the marked term of the opposition Voiced:Voiceless; and, vice versa, the marked term of the opposition Voiced:Voiceless corresponds to the unmarked term of the opposition Lax:Tense, and the unmarked term of the opposition Voiced:Voiceless corresponds to the marked term of the opposition Lax:Tense.

The Correspondence Hypothesis and the Law of Duality are inconsistent with the theories of universal grammar which take 'subject' and 'object' as primitive universal notions. They require for their comprehension a more abstract theoretical framework which treats 'subject' and 'object' as notions with a restricted scope of application rather than as universal notions. Such a theoretical framework is provided by AG.

5. Cross-linguistic Generalizations and Coding Devices

In conclusion I will consider the relation of syntactic functions ergative and absolutive to morphology.

I propose a broad notion of morphology which covers any coding devices of a language, including word order. I define morphology as the system of coding devices of a language.

Ergative processes may be found in languages which do not have ergative morphology, that is they are not distinguished by coding devices. For example, as far as nominalizations are concerned, Russian, an accusative language, has an ergative system: genitive functions as an absolutive and instrumental functions as an ergative (Comrie, 1978: 375-376). In French and Turkish, both accusative languages, there are causative constructions which are formed on ergative principles (Comrie, 1976: 262-263); in French there are antipassive constructions (Postal, 1977).

Can ergative processes not distinguished by coding devices be considered distinct formal processes?

I do not think so. A language is a sign system. But in a sign system signata cannot exist without signantia, that is without distinct coding devices. True, any natural language is a very complex sign system in which there is no one-one correspondence between signantia and signata. Rather, one signans may correspond to many signata, and, vice versa, one signatum may correspond to many signantia. But for sign systems the following general semiotic law may be formulated which I call the Law of Identification of the Classes of Signata:

Different signata belong in the same class if they are not distinguished from one another by at least one distinct coding rule.

In conformity with this semiotic law I propose the concept of the grammatical category defined as follows:

A grammatical category is a class of grammatical signata that are not distinguished from one another by at least one distinct coding rule.

In studying natural languages one may discover various linguistic relations. But if given linguistic relations are not distinguished from one another by at least one distinct coding rule, they belong in the same grammatical category.

Under the proposed definition of the grammatical category ergativity can constitute a distinct grammatical category in a given language only if it is distinguished from other relations by at least one distinct coding rule.

In order to make my case concrete, I will consider ergativity in Russian. Comrie claims that "as far as nominalizations are concerned, Russian has in effect an ergative system (Comrie, 1978: 376)." This claim is based on the following data.

In Russian passive constructions can be nominalized. For ex-

ample, we may have:

- (22) a. Gorod razrušen vragom
city has-been-destroyed enemy-by
'The city has been destroyed by the enemy.'
b. razrušenie goroda vragom
destruction city-of enemy-by
'the city's destruction by the enemy'

(22b) is a nominalization of (22a). In (22b) genitive goroda denotes a patient and instrumental vragom denotes an agent, and the verbal noun razrušenie corresponds to a transitive predicate. This nominal construction correlates with a nominal construction in which a verbal noun corresponds to an intransitive predicate and genitive denotes an agent; for example

- (23) priezd vraga
arrival enemy-of
'the enemy's arrival'

If we compare (22b) with (23) we can see that the patient in (22b) and the agent in (23) stand in the genitive (functioning as an absolutive) while the agent in (23) stands in the instrumental (functioning as an ergative). Therefore we may conclude that in Russian nominalizations involve ergativity.

Does ergativity constitute a distinct grammatical category in Russian nominal constructions?

Consider the following example of nominalization in Russian:

- (24) a. Ivan prenebregaet zanjatijami
John neglects studies
'John neglects studies'
b. Prenebreženie Ivana zanjatijami
Neglect John(gen) studies(instr)
'John's neglect of studies'

The surface structure of (24b) is the same as the surface structure of (22b), but instrumental zanjatijami denotes a patient rather than an agent and genitive Ivana denotes an agent rather than a patient. In this instance of nominalization instrumental zanjatijami functions as an object and genitive Ivana functions as a subject.

It is not difficult to find more examples of nominalization in which instrumentals denote patients rather than agents and genitives denote agents rather than patients. This type of nominalization occurs in a large class of verbs that take an object in the instrumental, like rukovodit' 'to guide', upravljat' 'to manage', torgovat' 'to sell', etc.

All these examples show that Russian does not use any coding devices to make ergativity a distinct grammatical category in nominal constructions. True, ergativity differs from other rela-

tions denoted by the instrumental in Russian nominal constructions. But, since ergativity is not distinguished from other relations in the opposition instrumental:genitive by at least one coding rule, ergativity does not constitute a distinct grammatical category and is simply a member of the class of relations denoted by the instrumental in Russian nominal constructions.

The above consequence is of paramount importance for typological research: with respect to ergativity, only those syntactic processes are typologically significant which are reflected by morphological processes.

Here are some phenomena which are typologically significant for the study of ergative processes: relativization, split ergativity, extraction rules (called so because they extract a constituent from its position and move it to some other position: the term 'extraction rules' covers WH-Question, relativization and focus), antipassives, possessives.

The important thing to note is that the ergative processes connected with these phenomena have no counterparts in accusative languages; they characterize only different types of ergative languages.

In making cross-linguistic generalizations concerning ergativity we have to look for coding devices which distinguish ergativity from other grammatical categories. Cross-linguistic generalizations which do not take into account coding devices can hardly be useful for classification of language types.

6. On the Correct Formulation of Syntactic Rules in Ergative Languages

I started the discussion of the syntactic structure of accusative and ergative languages on the assumption that the rules Equi NP Deletion and Subject Raising proposed for ergative languages by Anderson were correct. I argued that this assumption meets grave difficulties since the NPs considered to be subjects by Anderson possess syntactic properties which are incompatible with the notion of subject. I tried to show that the notions of subject and object are not valid for ergative languages and must be replaced by the notions of ergative and absolutive as distinct syntactic functions. The distinction between the separate notions of the morphological and syntactic ergativity was rejected and replaced by the single uniform notion of ergativity as a syntactical-morphological category. The new theory of ergativity I call the Integrated Theory of Ergativity because rather than oppose morphological ergativity and syntactic ergativity this theory integrates the two notions of ergativity in a single notion of ergativity.

The Integrated Theory of Ergativity has it that ergative vs. accusative is a fundamental typological syntactic dichotomy. This theory opposes theories which claim that from a syntactic standpoint ergative languages are organized in the same way as accusative languages. The nature and dimensions of this dichotomy can

be explained and understood properly only by relating the ergative system and the accusative system to a more abstract underlying system which is presented in AG.

Now, after I have proposed the Integrated Theory of Ergativity, I will show how to formulate correct syntactic rules for ergative languages based on this theory.

In order to formulate the new syntactic rules for ergative languages, consider the following examples given by Anderson (Anderson, 1976: 8):

(25) Equi NP Deletion

- a. John wants to laugh.
- b. John wants to be tickled by Bill.

(26) Subject Raising

- a. John seems to be laughing.
- b. John seems to be getting the job.
- c. John seems to have been tattooed by a Dayak.

In these examples the syntactic rules apply to the Subject NP in the lower clause regardless of whether it denotes an agent or a patient. Equi applies to an Agent NP in (25a) and to a Patient NP in (25b). By the same token, in (25a,b) an Agent NP is raised out of the NP position in the lower clause, while in (26c) it is a patient NP. According to AG, the NPs to which the above rules apply are primary terms which must be interpreted as subjects in accusative languages. Subjects may denote either agents or patients which are not formal grammatical categories in English or in any other accusative language. So, the English rules of Equi Deletion and Subject Raising are sensitive to the notion of the subject rather than to the notions of agent or patient which do not have a formal status in English.

Now let us consider the examples of Equi Deletion from Basque given by Anderson to make the point that the above syntactic rules apply to Basque, as well (Anderson, 1976: 12):

- (27) a. dantzatzerat joan da
dance-infin-to go he-is
'he has gone to dance'
- b. txakurraren hiltzera joan nintzen
dog-def-gen kill-infin-to go I-was
'I went to kill the dog'
- c. ikhusterat joan da
see-infin-to go he-is
'He_i has gone to see him_j'
*'He_i has gone for him_j to see him_i'

Anderson argues that these examples show that the Equi Deletion in Basque requires identity of subjects; it can never delete the coreferential object in the lower clause. Anderson claims

that the rule of Equi in Basque "is sensitive to the same notion of subject as in English (Anderson, 1976: 12)". This claim is false because Anderson confounds the notion of agent with the notion of subject: Basque Equi applies to the agent while in English Equi applies to the subject. Talking of the agent in Basque, I mean the agent as a formal grammatical category rather than the agent as a semantic notion. In ergative languages the agent has a formal status because it is encoded by the ergative case or other morphological devices; in accusative languages the agent has no formal status because accusative languages do not have morphological devices for encoding the agent. In all above examples it is the Agent NP denoted by the ergative case which is deleted in the lower clause; it should be noted that Equi can apply only to agent NPs in the ergative and never to patient NPs in the absolutive.

So, the two rules apply to the formal category of subject in accusative languages and to the formal category of agent in ergative languages. In accusative languages we have Subject Raising, while in ergative languages, Agent Raising. Equi Deletion deletes subjects in accusative languages and agents in ergative languages.

Subject Raising in accusative languages and Agent Raising in ergative languages apply both to transitive and intransitive clauses. In ergative languages the agent in intransitive clauses can be denoted only by the absolutive since, as was shown in Section 4, the primary term in the absolutive in intransitive clauses is the point of neutralization of the opposition ergative:absolutive and so the absolutive may be identified either with an agent or with a patient. Here are examples of Subject Raising in Tongan given by Anderson (Anderson, 1976: 13):

- (28) a. 'oku lava ke hū 'a Mele ki hono fale
pres possible tns enter abs Mary to his house
'It is possible for Mary to enter his house'
- b. 'oku lava 'a Mele 'o hū ki hono fale
pres possible abs Mary tns enter to his house
'Mary can enter his house'
- c. 'oku lava ke taa'i 'e Siale 'a e fefine
pres possible tns hit erg Charlie abs def woman
'It is possible for Charlie to hit the woman'
- d. 'oku lava 'e Siale 'o taa'i 'a e fefine
pres possible erg Charlie tns hit abs def woman
'Charlie can hit the woman'
- e. *'oku lava 'a e fefine 'o taa'i 'e Siale
pres possible abs def woman tns hit erg Charlie
'The woman can be hit (by Charlie)'

Anderson interprets these examples as evidence that "Tongan subject raising, then, only applies to subjects in the same sense as English subject raising (Anderson, 1976: 13)." But here again Anderson ignores the existence of the formal category of agent in Tongan and falsely identifies the Agent Raising in Tongan with the Subject Raising in English. In (28b) the agent NP in the absolutive 'Mary' has been raised into the matrix clause, and in

(28d) it is the agent NP in the ergative 'Charlie' which occurs in the matrix clause. (28e) is ungrammatical because the Patient NP in the absolutive has been raised. Note that in the English example (26c) a patient NP has been raised out of the lower clause; (26c) is grammatical because its patient NP which has been raised out of the lower clause has the formal status of a subject.

Anderson also analyzes data regarding conjunction formation and reflexivization. All of the data analyzed by Anderson involve rules which are sensitive to the formal category of agent rather than to formal category of subject. Since Anderson con-founds these formal categories, his formulation of syntactic rules in ergative languages is false.

In most ergative languages syntactic rules are sensitive to the formal category of agent. But there are other possibilities, too. For instance, in Dyirbal syntactic rules are in many cases sensitive to the formal category of absolutive; these rules are stated with reference to only absolutives in intransitive and in transitive clauses. In some ergative languages, like Archi, a Daghestan language, there are no constraints on the sensitivity of syntactic rules at all (Kibrik, 1977: 71).

The important thing is that none of the syntactic rules in ergative languages can be stated in terms of subject and object. Any statements of syntactic rules in ergative languages in terms of these notions are false.

7. Concluding Remarks

The ultimate test of a linguistic theory is the extent to which it makes linguistic phenomena intelligible.

What is a linguistic phenomenon?

In making cross-linguistic generalizations, a linguist may run into facts that do not fit in the conceptual framework in terms of which cross-linguistic generalizations are stated. These facts do not make sense, they are considered anomalous. The anomalous facts are important for the linguist. The linguist must be on the look-out for the anomalous facts because they make it necessary for him to trim and shape his ideas further, so that within the re-shaped conceptual framework the anomalous facts may become intelligible and cease to be anomalous. So long as everything proceeds according to his prior expectations the linguist has no opportunity to improve on his linguistic theory. The improvements on a linguistic theory result from the search for the explanations of anomalous facts.

The statement about the importance of anomalous facts for improvement on linguistic theories needs to be qualified. Not all anomalies are equally important for a linguistic theory. For instance, irregular plurals in English, such as mice from mouse are anomalous, but they are not crucial for a theory of English grammar: these facts belong in the lexicon. Only if significant anomaly can be demonstrated, then there will be a genuine theoretic-

cal issue to face.

A fact that is a significant anomaly for a given linguistic theory I call a linguistic phenomenon.

It follows from the definition of the linguistic phenomenon that this concept is relative to a given theory. A fact that is anomalous from the standpoint of one theory may be regular from the standpoint of another theory.

To explain a linguistic phenomenon is to subsume it under a conceptual framework from whose point of view it ceases to be anomalous and is considered regular.

In testing a linguistic theory it is important to find out whether this theory can make sense of linguistic phenomena that there is no way of accounting for by use of the currently accepted theories and, in addition, for all those phenomena that contravene these theories.

Ergative languages are a rich source of significant anomalies for linguistic theories which use the concepts of subject and object as universal concepts.

No matter how well these theories fit the accusative languages, they run into difficulties when applied to the ergative languages.

There are two ways of solving these difficulties: either to demonstrate that ergative languages have the same syntactic structure as accusative languages, or, if this cannot be done and rather the opposite can be demonstrated, to abandon the notions of subject and object as universal concepts and develop a new conceptual framework.

In the present paper I tried to demonstrate that ergative vs. accusative is a fundamental typological syntactic dichotomy. This view opposes theories which claim that from a syntactic standpoint ergative languages are organized in the same way as accusative languages. The nature and dimensions of this dichotomy can be explained and understood properly only by relating the ergative system and accusative system to a more abstract underlying system which is presented in AG.

AG claims that ergative and absolutive cannot be defined in terms of subject and object but rather must be distinct primitive syntactic functions, and therefore subject and object cannot be considered valid universal concepts. Both series of concepts must be related to a more abstract series of concepts defined in terms of the relation operator:operand.

Acknowledgements

The author wishes to thank Judith Aissen, Noam Chomsky, R.M.W. Dixon, Isidore Dyen, Micheline Petruszewycz, Claude Tchekhoff for comments on certain aspects of the present paper.

REFERENCES

1. Anderson, S.R. (1976). 'On the Notion of Subject in Ergative Languages'. In Li, C.N. (ed.).
2. Chomsky, Noam (1965). Aspects of the Theory of Syntax. Cambridge, Massachusetts: The MIT Press.
3. Churchward, C.M. (1953). Tongan Grammar. London: Oxford University Press.
4. Comrie, B. (1976). 'The Syntax and Semantics in Causative Constructions: Crosslanguage Similarities and Divergences'. In Shibatani, M. (ed.), pp. 261-312.
5. Comrie, B. (1978). 'Ergativity'. In Lehman, W.P. (ed.).
6. Dixon, R.M.W. (1972). The Dyirbal Language of North Queensland. Cambridge: University Press.
7. Johnson, D.E. (1976). 'Ergativity and Universal Grammar'. To appear in Studies in Relational Grammar. Perlmutter, D.M. (ed.).
8. Johnson, D.E. and Postal, P.M. (1980). Arc Pair Grammar. Princeton, New Jersey: Princeton University Press.
9. Keenan, E.L. (1976). 'Towards a Universal Definition of "Subject"'. In Li, C.N. (ed.).
10. Keenan, E.L. and Comrie, B. (1977). 'Noun Phrase Accessibility and Universal Grammar'. Linguistic Inquiry 8, pp. 63-99.
11. Kibrik, A.E. (1977). 'Canonical Ergativity and Daghestan Languages'. In Plank, F. (ed.).
12. Larsen, T.W. and Norman, W.M. (1979). 'Correlates of Ergativity in Mayan Grammar'. In Plank, F. (ed.).
13. Lehman, W.P. (ed.) (1978). Syntactic Typology: Studies in the Phenomenology of Language. Austin: University of Texas Press.
14. Li, C.N. (ed.) (1976). Subject and Topic. New York and London: Academic Press.
15. Martinet, A. (1975). Studies in Functional Syntax. Munich: Wilhelm Fink Verlag.
16. Perlmutter, D.M. and Postal, P.M. (1977). 'Towards a Universal Characterization and Passivization'. Proceedings of the Third Annual Meeting of the Berkeley Linguistic Society.
17. Plank, F. (ed.) (1979). Ergativity. Towards a Theory of Grammatical Relations. London and New York: Academic Press.
18. Postal, P.M. (1977). 'Antipassive in French'. NELS 7, pp. 273-313.

19. Shaumyan, S.K. (1977). Applicational Grammar as a Semantic Theory of Natural Language. Chicago: University of Chicago Press.
20. Shibatani, M. (ed.) (1976). Syntax and Semantics 6. New York and London: Academic Press.
21. Tchekhoff, Claude (1978). Aux fondements de la syntaxe: l'ergative. Paris: Presses Universitaires de France.

II

GENERAL

THE NATURE AND USE OF METAFUNCTIONS IN
SYSTEMIC THEORY: CURRENT CONCERNS

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The literature on functional theories of language is being enlarged at present by systemic linguists, and that not without controversy. The Seventh International Systemic Workshop in 1980, made it clear that there were interestingly conflicting views amongst leading systemicists such as M.A.K. Halliday, Robin Fawcett, and James Martin. Questions were raised about the number of metafunctions, their relevance to system networks, possible generative forms of the semantics and/or lexico-grammar and the allocation of systems to functions. The relationships of the functions to the concept of register and its field, mode and tenor dimensions were also discussed by Martin (1980/81). This paper addresses itself to these matters.

Halliday's most recent position can be found in Halliday 1978 and 1979. Language is viewed as a semiotic system, as a code that has two or more realizational cycles in it, which means that it consists of at least three strata: semantics, which is realized by lexico-grammar, which is realized by phonology; 'at least' allows for the addition of further strata above the semantic, 'since the semantic system itself can be regarded as the realization of some higher level semiotic' (1979:57).

The number of functions and 'where' they belong in the theory is dealt with this way: the functions are seen as 'modes of meaning', so they belong to the semantic stratum and seen from this vantage point there are three functions: ideational, interpersonal and textual, with the ideational having the sub-components of experiential and logical. It is argued that within the semantics the experiential and logical are linked because 'there is greater systemic interdependence between these two than between other pairs' (1978:131). Viewed from the vantage point of a higher level semiotic than the linguistic one, the ideational and interpersonal are yoked together as 'extrinsic' (dealing in different ways with what goes on in behaviour) as opposed to the 'enabling' function, the textual. When the functions are viewed from below, from the lexico-grammatical stratum, the logical is distinct from all others 'since it alone is, and always is, realized through recursive structures' (1978:170).

The 1979 article repeats the arguments of Halliday 1969 and 1970 that the functions are justified because they are linked to 'relatively independent' sets of options, but now the options are seen as semantic rather than as components of the grammar (cf. 1979:61). However, the most far reaching hypotheses of the 1979

article are that: '1) each of these semantic components typically generates a different kind of structural mechanism as its output, or realization; and that 2) these different types of structure are non-arbitrarily related to the kinds of meaning they express'(61). The different 'modes of meaning' (semantic systems) are then claimed to be uniquely related to the nature of the 'modes of expression' (grammatical structures) they generate. Experiential systems give rise to constituent, role type structures such as Actor, Process, Goal, which are in themselves unsequenced. It is argued that this is non-arbitrary, that it expresses how we order our experience when we want to deal with it linguistically; we split it up into discrete entities which interact with each other.

The interpersonal function is reflected in structures that permeate the clause. In English, modalities, swear words and obscenities can be spread throughout the unit. Interpersonal meaning can also be expressed by intonation contours, mapped on to the clause as a whole. The rationale behind this mode of expression is that interpersonal meanings represent 'the speaker's on-going intrusion into the speech situation' (Halliday 1979:67), so they are prosodic or cumulative.

Textual structures on the other hand, are seen as periodic or culminative. Typically, in English, in the unmarked instance, theme occurs at the beginning of the clause and the informational new towards the end. So 'what the textual component does is to express the particular semantic status of elements in the discourse by assigning them to the boundaries...and so, marks off units of the message as extending from one peak of prominence to the next' (op. cit.:69).

The logical mode is seen to be realized by structures different again from the other three because they are recursive and generate complexes rather than simplexes.

Halliday recognizes that these associations of kinds of structures with semantic functions are typical tendencies rather than rules; whereas the functions themselves can be regarded as universals, the structural tendencies, although non-arbitrary, represent statements about English, and modes of expression may vary from language to language. Nevertheless, his argument is attractive.

Robin Fawcett's Cognitive linguistics and social interaction: towards an integrated model of a systemic functional grammar and the other components of a communicating mind (1980), presents rather a different view. Its very title contains language clearly within the systemic tradition and language redolent of the Chomskyan tradition; and there is a theoretical ambiguity about Fawcett's position. He sees linguistics as 'in principle a branch of cognitive psychology'(4), and uses the term 'grammar' in the Chomskyan sense of a model of a particular language. Systems are located in the semantics and realized through syntax, items and intonation. He criticizes

Halliday for semanticizing his lexico-grammatical stratum and argues 'that syntax is a level of language that can be described (though not explained) independently of the semantic system networks from which it is generated'(52). From his networks and realization rules it is apparent that Fawcett is much concerned about the generative form of the 'grammar' and despite his disclaimer(8) about taking elegance criteria too seriously, many of his positions seem to be dictated by considerations of parsimony. There is however much to be said for semanticized grammars such as many of Halliday's descriptive statements suggest. They have an important place in stylistics, text description and language pedagogy. Geoffrey Sampson, a non-systemicist, has asserted that systemic grammars are amenable for use in literary study and language teaching because they are good at showing the similarities and dissimilarities between sentences (Sampson 1980:230:231). Even when chasing after generative goals, systemicists should not lose this quality of clarity and staged detail; which is why the scales of rank and delicacy, as well as assignments to functions, remain important.

Fawcett is sensitive to Halliday's contribution towards formalizing the concept of function(25). However, he disagrees as to the number of functions. His dominant criterion for recognizing a function seems to be that of 'different type of meaning' rather than any paradigmatic or syntagmatic criteria. This leads him to recognize eight functional components of the semantics and three 'possibles'. The eight are experiential, logical, negativity (corresponding to Halliday's ideational and its sub-components), inter-actional, affective, and modality (all of which Halliday includes in interpersonal), thematic and informational (Halliday's textual). The three 'possibles' are the inferential, the metalingual (his examples seem to me to be interpersonal) and the discourse organizational, which Halliday and Hasan (1976) deal with as a matter of textual cohesion. This multiplicity of functions may help his semantic system-structural realization generative 'grammar', but the loss of generality means that, unlike Halliday, he cannot claim that every sentence, except formulas, has to be dealt with in terms of all the metafunctions; he can only claim in terms of several. His functions are perhaps best seen as an increase in delicacy useful for certain purposes and pre-occupations. Whether it is intended to do so or not, his own chart representing the comparison between his and Halliday's positions (28:figure 2) seems to suggest this.

Martin (1980/81) takes a provocative stance. After examining fifteen different criteria that have been used by systemacists, he asserts that there is 'no set of necessary and sufficient paradigmatic or syntagmatic reasons for locating systems in one metafunctional component or another (1). He interprets the concept of metafunction 'as an empirical claim about the paradigmatic organization of clause systems in English'(1) and maintains that it is specifically synchronic, referring to a particular rank, that of

clause, in the closed system part of the lexico-grammar. For him, extensions of the concept of metafunction to kinds of meaning, other grammatical ranks, and lexis, are by analogy and once extended are not open to testing by writing optimal grammars and observing how systems cluster (as suggested by Hudson 1974).

To overcome some of these problems he proposes a revision of register categories 'so that they will correlate more closely with the systems to which metafunctional labels are applied' (1). His revision involves maintaining my distinction between functional and personal tenor (Gregory 1967, Gregory & Carroll 1978); Halliday has variously included what is covered by functional tenor in field (Halliday 1965) or mode (Halliday, McIntosh & Stevens 1964). Martin differs from me in placing functional tenor in a deeper 'stratum' underlying field, personal tenor and mode, and giving rise to the schematic structure of text, as his figure illustrates (Martin op. cit.:25, fig. 28).

Semiotics	semantics	lexico-grammar
	↘ field	↘ experiential (↘transitivity)
functional tenor (↘ schematic structure)	↘ mode	↘ textual (↘theme)
	↘ personal tenor	↘ interpersonal (↘mood)

Unlike Fawcett, he sees each stratum as consisting of a full system-structure cycle at various ranks so that, for example, a semantic system of speech function would underlie lexico-grammatical mood. He argues that whereas it is probable that Halliday's proposed links between field and the experiential function, mode and the textual, personal tenor and the interpersonal, may be established by empirical research on texts, functional tenor does not have such a one-to-one relationship with a single function and so is 'deeper'. His hope is that if register could be shown to be linked to certain core well-motivated metafunctional components, it 'could be used to test the location of systems whose metafunctional address is unclear' (34).

I have modifications to suggest which will emerge from some objections to Martin's interpretation of Gregory (op. cit.) and Gregory and Carroll (op. cit.) Martin writes 'Gregory, following Halliday (1961), uses the term context for the stratum called semantics and does not recognize a fourth stratum of linguistically significant patterning' (25). Certainly I would now use the term Semantics for what was then described as context, but I maintain that a fourth stratum is to some extent recognized both in the 1967 and 1978 statements and that is situation, which I now see as a concern of semiotics. Situation was described as 'the study of those extra-textual features...which have high potential relevance to statements of meaning about the texts of language events' (Gregory

1967:178). This refers then to 'patterns' of human and social behaviour which have linguistic relevance and seems quite compatible with the current use of semiotics in linguistics. Context I described as 'the correlation of formally described linguistic features, groupings of such features within texts and abstracted from them, with those situational features themselves constantly recurrent and relevant to the understanding of language events' (op. cit.:178). This seems compatible with the current use of semantics (as we suggested in Gregory and Carroll op. cit.:4 & 9). The need for having both situational (or semiotic) and contextual (or semantic) categories is argued in Gregory (op. cit.:182-183), and, as Martin seems to recognize, this is why functional and personal tenor are both 'tenors'; they are the semantic reflection of semiotic addressee relationships, personal and functional. Recently, Halliday seems to be placing field, mode and tenor in the semiotic stratum, and giving them what might be called a portmanteau description; which combines what for Martin and me would be a semantic category, for example, field, with a semiotic category such as social process so he writes about a 'field' of social process (what's going on)', a 'tenor' of social relationship (who is taking part) and a 'mode' of symbolic interaction (how are the meanings exchanged)' (1978:189).

What I suggest as an alternative to both Martin and Halliday is represented in the following figure:

SEMOTIC	SEMANTIC	LEXICO-GRAMMATICAL (typical realization)	FUNCTION (normally associated with)
user's experience relationship	↘ field	↘ transitivity	experiential
addressee relationship:	↘ r		
	↘ e	tenors:	
personal	↘ i	personal	↘ mood/modality interpersonal
functional	↘ s	functional	↘ various multi-functional
medium relationship	↘ t		
	↘ e		
	↘ r	mode	↘ theme/information textual

Experience relationship is now preferred to purposive role (Gregory, op. cit., Gregory and Carroll, op. cit.) or social activity (Halliday 1978, 1979), as the semiotic category related to field to avoid possible confusion with personal or functional addressee relationship. Martin's suggestion that functional tenor underlies the other three and necessarily gives rise to schematic structures is rejected. In Gregory and Carroll (op. cit.) it was recognized that, in some

instances, functional tenor is the most predominant category: 'The generic structure of text is often defined in terms of functional tenor. An advertisement is by definition an attempt to persuade through both linguistic and visual means' (53; cf. also 60), but after a reasonably detailed description of a Collect of the Book of Common Prayer, we pointed out that 'such a configuration of field, mode and tenor indicates a register of the Christian Collect. This can be regarded as a field-determined register as the choices of mode and tenor can be seen as consequentially related to the nature of the field of discourse'(33). These observations still stand. I do not want to separate schematic structure from considerations of genre or generic structure; and as Martin recognizes, and seems to think research will justify (Martin op. cit.:24-30), I prefer to characterize genre in terms of all dimensions of language variety (cf. Gregory and Carroll op. cit.:45). Genre I consider semantically as register, and semiotically as generic situation. The need for both sets of categories, particularly in the study of literary genres, lay behind the following comment: 'great literature may often make its impact by constantly not meeting the expectations of the addressee. Writers will consciously alter normal patterns of form and substance, will 'play' with the semantic possibilities offered by language in order to create an innovative work that draws our attention afresh to human experience and its verbalization' (Gregory & Carroll, op. cit.:73).

The relation of the register categories to the functions of language they are 'normally associated with', and the lexico-grammatical features they are 'typically realized by', is deliberately a guarded statement. As Martin points out, the detailed research has not yet been done to demonstrate empirically what we intuitively think is so, and, elsewhere (Gregory 1980:76), I have indicated that the links between the register dimensions and the functions are likely to be a matter of tendency rather than exclusivity, multivalence can be expected everywhere. But this in no way invalidates Martin's proposal; register research is the most important work to be done in systemics to clarify relationships between the meta-functions and the semantic and lexico-grammatical strata (cf. Berry 1980). But a non-exact match between the register categories and lexico-grammatical groups of systems need not hamper the research; just make it a little more, perhaps necessarily, complex. We need functional tenor as the reflection of an important dimension of the social semiotic that surrounds language: the functional relationship of potential addresser to potential addressee, and we need generic situation to represent semiotically what is semantically reflected by register. The meta-functions will not be empirically less well established if one component of the semantics is variably hospitable in its relation to lexico-grammatical systems; mismatches of various kinds are rather what we should expect.

Perhaps too we ought to be careful about attempting to 'prove' the meta-functions; this may be falling into the Chomskyan scientific

trap; they have already shown themselves to be helpful organizing and investigating concepts, not only in grammatical analysis but now also in the linguistic study of literature (cf. Halliday 1972/73, Benson and Greaves 1981a & b, Gregory 1981) and in discourse analysis (cf. Berry 1981). They are a means of tackling the manifest complexity of meaning. We need them.

References

- Berry, Margaret, 1980. "They're all out of step except our Johnny: a discussion of motivation (or the lack of it) in systemic linguistics" Department of English Studies, University of Nottingham: revised version of paper read to the Seventh International Systemic Workshop, Sheffield, September 10, 1980.
- _____, 1981. "Systemic Linguistics and Discourse Analysis: a multi-layered approach to exchange structure" in M. Coulthard and M. Montgomery (eds.) Studies in Discourse Analysis, London: Routledge & Kegan Paul.
- Benson, J.D. & W.S. Greaves (1981a). "Ideational, Interpersonal and Textual Meaning in Melville's Moby Dick". Toronto: Applied Linguistics Research Working Group, revised version of paper read to the Seventh International Systemic Workshop, Sheffield, 1980.
- _____, 1981b. "Textual Meaning in Trollope's Barchester Towers: the foregrounding of adversative conjunction". Toronto: Applied Linguistic Research Working Group.
- Fawcett, R.P., 1980. Cognitive Linguistics and social interaction towards an integrated model of a systemic functional grammar and the other components of a communicating mind. Heidelberg: Julius Groosverlag.
- Gregory, Michael, 1967. "Aspects of Varieties Differentiation" Journal of Linguistics 3.
- _____, 1980. "Language as social semiotic: the recent work of M.A.K. Halliday" Applied Linguistics, Vol. 1.
- _____, 1981. "Linguistics and the Theatre: Hamlet's Voice-Aspects of Text formation and Cohesion in a Soliloquy" Linguistics and the Humanities Conference. University of Texas, Arlington (to be published in Proceedings).
- Gregory, M.J. & S. Carroll, 1978. Language and Situation: Language varieties in their Social Contexts. London: Routledge and Kegan Paul.

Halliday, M.A.K., 1961. "Categories of the Theory of Grammar"
Word 17:3.

_____, 1965. "Speech and Situation". Bulletin of the National Association for the Teaching of English: some aspects of oracy 2:2.

_____, 1969. "Options and Functions in the English Clause"
Brno Studies in English, 8.

_____, 1970. "Language Structure and Language Function" in
J. Lyons (ed.) New Horizons in Linguistics. Harmondsworth:
Penguin.

_____, 1971/1973. "Linguistic function and literary style:
an enquiry into the language of W. Golding's *The Inheritors*"
in S. Chatman (ed.) Literary Style: a symposium. New York:
Oxford University Press. Reprinted in M.A.K. Halliday
Explorations in the Functions of Language, London: Edward
Arnold.

_____, 1978. Language as a Social Semiotic: the social inter-
pretation of language and meaning. London: Edward Arnold.

_____, 1979. "Modes of meaning and modes of expression: types
of grammatical structure and their determination by different
semantic functions" in D.J. Allerton et al (eds.). Function
and Context in Linguistic Analysis: essays offered to W. Haas,
Cambridge University Press.

Halliday, M.A.K., A. McIntosh & P. Stevens, 1964. The Linguistic
Sciences and Language Teaching, London: Longman.

Halliday, M.A.K. & R. Hasan, 1976. Cohesion in English, London:
Longman.

Hudson, R., 1974. "Systemic Generative Grammar" Linguistics 139,
5-42.

Martin, J.R. 1980/1981. "Register and Metafunction" Department of
Linguistics, University of Sydney, revision of paper read to
the Seventh International Systemics Workshop, Sheffield.

Sampson, G. 1980. Schools of Linguistics: Competition and
Evolution. London: Hutchinson.

C. S. PEIRCE AND LINGUISTICS

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Although the names of C. S. Peirce and F. de Saussure are often mentioned together as pioneers in the study of signs, it bears pointing out that their writings on this subject differ widely in both elaboration and focus. Saussure's Cours de linguistique générale (1955) contains a four-page (32-35) proposal for a new branch of social psychology to be called "semiology", which would concern itself with social sign systems such as religious rites, military codes and insignia, manners, and other customs of all kinds. Peirce's studies in "semiotic", on the other hand, comprise many hundreds and perhaps thousands of pages, and focus on signs not as systems but as the substance of thought itself.

For a number of reasons, including especially the fact that Saussure was a linguist and Peirce a philosopher, as well as the late publication and inherent complexity of most of Peirce's material, Saussure's influence continues to overshadow that of Peirce in humanistic studies, including linguistics. In light of the immensely greater sophistication of Peirce's account, I consider this to be an unfortunate imbalance. Hence, my paper represents a first attempt to present Peirce's ideas, together with some suggestions about how they could be applied to linguistic problems, to linguists.

Peirce's life-long goal was to be an architectonic philosopher. This means that he tried to devise a systematic description of reality, being, and experience, all of whose parts would be interrelated and arranged in hierarchies. At the highest level he devised a phenomenology which categorizes all phenomena in terms of the number of relates they involve. He eventually concluded that all phenomena could be analyzed as involving either one, two, or three elements, as typified respectively by qualities, which are monadic, brute force, which presupposes two entities in conflict, and laws, which determine a relationship between two other relates, as a giver determines the relationship of ownership between a gift and a receiver. In describing the experience of beings with intelligence, the most relevant category is that of laws, since intelligence consists in the power to bring elements into mutual relationships. This operation, called thinking, is, according to Peirce, carried out through a series of bringings-into-relation through laws, and the mediators in this operation, the entities which serve to activate the laws,

are called signs. He defines the sign as follows (Peirce 1931-58:2.228):

A sign is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the interpretant of the first sign. The sign stands for something, its object.

Let me briefly comment on the three components of the semiotic relation. At first glance, the "object" seems to betray a naïve theory of reference, i.e., it seems to suggest that every sign stands for a real thing that could be pointed out specifically. But the similarity to the referential model is only apparent. The object for Peirce is not an individual but a general idea, a proposition or set of propositions existing in someone's mind about some aspect of reality. This conception presupposes Peirce's acceptance of the philosophical doctrine of realism. Realism differs from the antagonist point of view, nominalism, in that while the latter denies the existence of generals such as 'whiteness', realism affirms that, although these are exclusively mental entities, they are nevertheless real and existent since their derivation from particular instances is not arbitrary or accidental, but imposed by nature and the laws of mind.

The fundamental component of the representational relationship is, of course, the "sign". The sign is of the nature of a mediator. It connects two entities which would not otherwise be connected; it is a law whose power is precisely to determine such a connection. I stress the concept of mediation because it seems to be missed in the widely accepted account of the process of signification which represents the semiotic relation to be of the nature of a triangle. The triangular model is misleading because it implies that each component is directly connected with all others, when in fact two of the elements would not be related at all were it not for the mediating power of the sign. A more accurate graphical representation of the relation would therefore be simply linear.

object-----sign-----interpretant

The most distinctly Peircian component in the model of signification--the "interpretant"--is of paramount importance, since it is the basis of Peirce's description of semiosis, or thought, as well as the key to the pragmatic theory of meaning.

Peirce contended that thought is of the nature of a continuum of signs translating signs, or as he put it more often, of signs interpreting signs. This process can be described as follows:

A sign (a sensory percept, or a proposition) conveys an object to a mind, where cognition is produced in the form of an interpretant. The power of the sign is such that this interpretant now stands in relation to the same object conveyed by the sign; hence, the interpretant now becomes itself a second sign of the object. This new sign, in turn, conveys the object to yet another interpretant, which becomes a third sign of the same object, and so on indefinitely. This continual translation of signs is not, as it might seem, stagnant, owing to the fact that each succeeding interpretant, by drawing on the collateral experience of the interpreting mind, may be more fully developed than its predecessors; it may clarify or enlarge upon information already digested. Moreover, as interpretation becomes more and more developed, the object of the sign becomes steadily richer in information: it represents the sum total of all accumulated interpretation.

But neither the interpretant, nor even the string of interpretants constitutes the sign's meaning. In Peirce's view, the continual translation of signs into signs provides no concrete connection with reality. His solution to this problem represents the essence of his theory of meaning and reality, which he called pragmatism. The continuum of interpretants is not in fact of infinite length; there is a stopping point which corresponds to the instant at which the interpreter becomes satisfied with his interpretation of a sign, such that he is willing to mould his future conduct in harmony with his interpretation. Peirce called this point the logical interpretant, and he described its effect upon an interpreter as a habit.

The term "habit" must be carefully explained, in order to differentiate Peirce's understanding of it from that of stimulus-response theorists. For them, a habit is an automatic reflex which must be triggered--either inwardly or outwardly--whenever the correct stimuli are present. The crucial difference between this usage and that intended by Peirce is the element of mechanicalness. In a word, Peirce substitutes reflection for reflex. For him, a habit is a general resolution, arrived at through sufficient development of thought, to mould one's future actions to what one perceives to be the reality of a situation. The word "habit" is appropriate in this sense because we do not normally have to completely reinterpret signs on each new occasion we perceive them. On the other hand, we are always free to change our habits if we decide, upon reflection, that our normal interpretations are inadequate or imperfect.

It remains to be said that while the logical interpretant represents a level of interpretation that can properly be called "meaning", it is not the highest such level. Since the logical interpretant is the habit of an individual, it is subject to error, since any individual may have inaccurate or incomplete data, or inadequate powers of inference. Peirce sought to describe a higher level, where meaning would be identical to reality and

truth. His pragmatic solution was to propose that the truth would be the final settled opinion which an indefinite community of scientific investigators would ultimately achieve. The habit this opinion would effect in these investigators would be the final logical interpretant, and the object of this interpretation would be reality.

Although I am forced by reasons of time and space to omit a discussion of the Peircian sign types, I consider the foregoing to represent, in a nutshell, what every linguist should know about semiotic. I am now in a position to address the question: "How does Peirce's account of signs and meaning differ from that of Saussure?"

Saussure's discussion of the sign is, in my view, marred by a number of quirks, such as his insistence on using the term "sign" for the aggregate of the components of the semiotic relationship, his gratuitous insistence on the psychological status of the signifiant, and his quasi-mystical claim that semiotic components are at the same time separate and consubstantial. Going beyond these peculiarities, however, we find that this model presupposes the traditional ideational theory of meaning, which defines meaning as the idea to which a sign is connected.

This definition of meaning is subject to two fundamental criticisms. First, it is logically invalid, in that it incorporates a term which is itself undefinable, namely "idea". It is true that there is a common-sense notion of what an idea is, but that kind of notion is not admissible in a definition which purports to be scientific. The second defect is of a more practical nature: The equation of "idea" and "meaning" makes this model incapable of accounting for variations in meaning brought about through the effects of context, presupposition and other pertinent information. This is no minor difficulty, because the correct interpretation of most signs, especially linguistic signs, involves considerable background information. Consider, for example, the sentence "What nice weather!", uttered by a person who has just looked outside to see a cold dark rainy day. Clearly, mechanical pairing of signs with ideas fails to add up to the intended message: nice, in view of ironic intent, still DENOTES the idea 'nice', but it MEANS 'bad'.

The Peircian sign model incurs neither of these difficulties. The logical problem is avoided by the designation of the ultimately observable habit as the meaning of the sign. The practical problem is solved by the explicit inclusion of the interpretant in the semiotic model, since its successive stages of development allow for the incorporation of whatever collateral information the interpreter may have at his disposal.

It seems to me that Peirce's description of the thought process provides the ideal tool for the expression of the meaning

and signification, in the broadest sense, of any sign, since it affords the possibility of reproducing the series of interpretants that lead to any reasoned habit. Viewed as a formal semantic procedure, this reproduction would, I believe, comprise three stages. In the first stage, the sign would be mechanically paired with the idea it conventionally represents. Signs composed of several parts, i.e., sentences, would require in addition the assignment of a structural interpretation akin to a deep syntactical structure. The second stage would allow for the inclusion of information from the interpreter's collateral experience. Each interpretant at this stage might take the form of an observation incorporating such information, and an inference about its relevance to the signification of the sign being interpreted. Interpretation would end at the third stage, where a conclusion would be drawn on the basis of all previous inferences, and a habit or habit-change produced or evoked. The habit can be envisioned as a proposition of the form: "I believe that the foregoing interpretation is correct, and I will mould my future actions to this belief". Regarding the "What nice weather!" example adduced earlier, stage one might pair nice with 'nice', and weather with 'weather' on a grid of the form "EXCL weather be nice". Stage two would contain information both contextual (knowledge of actual weather conditions) and possibly presuppositional (knowledge of the speaker's personality and past utterances) which would motivate inferences that the statement might have been meant ironically. Stage three would represent the interpreter's decision on this matter and a resolution to proceed in accordance with that decision. Stage two, incidentally, could also explicitly account for humor, lies, metaphor, cultural- and discourse-determined expectations, allusions, puns and other lexical associations.

The concept of interpretation is by no means the only aspect of semiotic theory that is relevant to linguistic semantics, but at this point I wish to turn to an issue of broader significance, one which invites presentation of the Peircian world-view.

In his book Language and Mind (1972), Noam Chomsky devotes considerable attention to the question of the origin and development of man's linguistic capacity. In his opinion, this ability cannot be explained merely in terms of the brain's faculty for cataloguing information and forming sentences through analogy with a finite number of learned patterns of combination. Speakers do not, he says, simply imitate and substitute; they actually "create"--they are capable of understanding and producing a potentially infinite number of sentences, of making these sentences appropriate to concrete situations, or, conversely, of speaking in the absence of overt stimuli.

Chomsky contends that the best explanation for the existence of this creativity is found in the Cartesian (rationalistic) concept of mind-body dualism. Descartes believed that "mind" is

a substance totally unlike "body", that the origin of mind, as well as the laws that determine its properties, are completely separate from those of the physical world. He concluded that it is useless to search for explanations of the facts of mind in outward manifestations: They must be explained as innate givens, or inborn tendencies. This philosophical stance allows Chomsky, first of all, to reject the methods and dogma of behaviorism, which maintains that mind and body are linked in a mechanical way, and second, to propose that linguistic ability, or competence, consists of a set of innate ideas which are of the nature, in his opinion, of highly abstract rules and principles.

Peirce, like Chomsky, was aware that the mind seems to be capable of feats far beyond those which the information available to it through experience and analogy would warrant us to expect. In order to explain this "tendency to think truly", he posited, again like Chomsky, innate ideas. But here the similarity between the two positions ends, because Peirce radically rejects the mind-body dualism. This rejection is most clearly seen in his identification of meaning as habit, since it presupposes the belief that what goes on in the mind would, under proper conditions in an indefinite future become observable in outward behavior.

On the basis of the assumption of mind-body unity Peirce proposed a biological explanation--heredity--for the existence of innate ideas (Peirce 1931-58:5.591):

You cannot seriously think that every little chicken that is hatched, has to rummage through all possible theories until it lights upon the good idea of picking up something and eating it. On the contrary, you think that the chicken has an innate idea of doing this; that is to say, that it can think of this, but has no faculty of thinking anything else...But if you are going to think every poor chicken endowed with an innate tendency towards a positive truth, why should you think to man alone this gift is denied?

Chomsky's (1972:97) reply, that "the fact that the mind is a product of natural laws does not imply that it is equipped to understand these laws" only shows his failure to understand the hypothesis. The laws of nature, in particular the laws of natural selection, can indeed have helped determine man's ability to think truly, because they consistently favored those humans or proto-humans who by chance were capable of "guessing right" about natural laws, such as the law of gravity or the laws of mechanics. It was precisely these humans who, by shaping their behavior in accordance with these laws, were most successful in surviving long enough to propagate themselves.

The explanation for linguistic competence is merely an extension of this same idea, because linguistic ability is a unique

tool for survival. Just as every little proto-chick that did not get the good idea of picking up something and eating it soon removed itself from the gene pool, every proto-man who was incapable of communicating, of understanding verbal warnings, making his needs known, persuading, coaxing, refuting, etc., must have been selected against in competition with those of his fellows who, by chance, were endowed with more substantial linguistic ability.

This conclusion leads to another question, namely, "What factors determined the set of universal principles (if indeed these exist) which underlie natural languages?" I cite this question not because I intend to discuss it, but to differentiate it from the question of origin. My point is the superiority of Peirce's explanation of linguistic competence, which puts the matter in the scheme of a scientific view of evolution, over the quasi-mystical, mentalistic interpretation offered by Chomsky.

References

- Chomsky, Noam (1972). Language and Mind (Harcourt, Brace, Jovanovich:New York). Enlarged edition.
- Peirce, Charles Sanders (1931-58). Collected Papers of Charles Sanders Peirce, eds. C. Hartshorne, P. Weiss and A. Burks (Harvard University Press:Cambridge, Mass.). 8 volumes.
- Saussure, Ferdinand de (1955) Cours de linguistique générale, published by C. Bally and A. Sechehaye (Payot:Paris). Third edition.

POSITIVISM IN LINGUISTICS

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0.0 *Introductory Remarks.*

0.1 At the beginning of this century, historical-comparative linguists, especially in Germany and Italy, were accused by an emerging group of 'idealist' scholars of being 'positivists'. The 'idealists' felt that linguists of the preceding decades were practicing a 'soulless' and materialist approach to language concerned with what Auguste Comte (1798-1857) had called the '*petites choses vraies*'. Their own interest lay in bringing into the focus of attention aspects such as culture, national identity and 'spirit' as reflected especially in the literary languages of a people. Since that time, we find the general accusation of 'positivism' or 'atomism' repeated in linguistic textbooks and histories of linguistics. This blanket criticism of the Neogrammarians and their adherents by later generations of linguists is, curiously enough, invariably made without the term 'positivism' being defined. Indeed, there is hardly a textbook in which the name of Comte, usually regarded as the originator of the term and concept of 'positivism', is mentioned. There are indications that 'positivism' has become an emotion-laden term with little other than negative connotations, quite in contrast to what the term itself originally implied. 'Positivism' has become a label used at various times by philosophers, epistemologists, social scientists, and others largely for polemic purposes, frequently without qualification.

0.2 Although several linguists have noted the influx of positivist ideas into the science of language by the mid-19th century (e.g., Bal 1966; Leroy 1967; Jankowsky 1972), few have attempted to trace this development, which was in fact quite in line with what was happening in other emerging disciplines of the period such as sociology and psychology. In fact, as far as I have been able to ascertain, hardly any scholar has supplied the reason why linguists in the past century were particularly receptive to a 'positivist' approach to their object of investigation. Nor did they try to indicate the positive results the assimilation of an approach practiced by the natural sciences led to in the development of linguistics. The present paper is an attempt to explore to what extent the notion of 'positivism' is applicable to linguistic theory and practice, past and present. It argues that a wide interpretation of the term is required in order to account for its variations in the form of 'materialism', 'determinism', 'scientism', etc. Finally, it traces positivist underpinnings in 20th-century linguistic cur-

rents usually labeled 'anti-mentalist', 'mechanist', 'operationalist', and the like.

1.0 *Positivism in Linguistics: The state of research.*

1.1 I know of only three articles written in recent years which address themselves to the question of positivism in linguistics, though none of them to a satisfactory degree. Thus Rebecca Posner, reviewing a critique by Robert A. Hall of the Neolinguists in Italy of roughly the years 1925-1955, refers to Hall's view of scientific method in historical linguistics as 'positivist', without any explication of what she meant by the term except for a passing assertion that Hall "firmly equates our field [i.e., linguistics] with physics" (Posner 1967:323).

Posner may be said to refer to a 'neo-positivist' position which she discerns in Hall's stand on scientific method. We may recall that the heyday of positivism, in linguistics as in other disciplines, was the period between the 1840s and the 1880s. Indeed, there appear to have been two positivist cycles in European thought, one occurring in the mid-19th century which had subsided only by the turn of the century, the other beginning with the 1920s, and continuing particularly strongly in the English-speaking world from the 1930s through the 1950s, with behaviorism representing one of the major intellectual currents in the social sciences, especially sociology, psychology, and linguistics.

Another paper (Rey 1971) constitutes by and large a modern reinterpretation of Comte's conception of language both biological and sociological. The writer says little about Comte's positivism apart from a few introductory, albeit sweeping, remarks about this 'scientisme optimiste et élémentaire' which is said to be at the basis of his philosophical system (Rey 1971:53-54). In fact, Rey's intention is to show that Comte's work foreshadowed a semiotic conception of language that we normally associate with suggestions made by Saussure, and not to delineate the development of positivism in linguistics.

A third paper (Seidel 1976), though directly addressing itself to the subject, makes only a few general observations, including the one that Edmund Husserl's (1859-1938) *Phänomenologie* was very much indebted to Comtean positivism. It contains no elaboration on any of these remarks. Seidel stresses the desirability of accounting for the influence of Comte's philosophy of science on linguistics, but he does little to advance its study.

1.2 However, as mentioned above (0.2), there are several other recent publications in which linguists have given a few hints about the connection between linguistics and a positivist philosophy of science. Boretzky (1977:30-34), for example, investigates to what extent the characterization of the linguistic theories of August Schleicher and those of the next generation of scholars as being 'positivist' is adequate. Médina (1978:6-10) argues that Schleicher's position would have been disavowed by Comte; Schleicher's historicism, he believes (p.9) was in effect radicalized by the Neogrammarians. While Boretzky makes an effort to return to the

sources of positivism, Médina seems to assume that everyone knows what the meaning of the term is. Neither gives a definition that might help us decide if linguistics has been, at one time or another, a definitely positivistic discipline, or, if not, to what extent did linguists adopt a theoretical position that could be regarded as akin to Comtean philosophy of science.

We may well ask ourselves whether linguists in the 19th century, in particular in the German-speaking lands in which the science of language progressed the most, were acquainted with Comte's work. According to my own findings there are few indications suggesting that he had a real impact on the development of linguistics, and those scholars in France who advocated an approach to the science of language inspired by Comte were largely ignored by their contemporaries. This may not be true of the lexicological work of Emile Littré (1801-81), who was the strongest advocate of Comte's philosophy in France, but certainly of the writings of Julien Girard de Rialle (1841-1904), Honoré Chavée (1815-77), Abel Hovelacque (1843 to 1896), and others who were snubbed by the professional historical-comparative linguists of the late 19th century.

If, therefore, we seem to recognize positivistic traits in the work of linguists, past and present, it is probably more correct to assume that 'positivism' represented an essential part of the general intellectual climate of a given period. (Indeed, it could be shown that Comte's philosophy of science is part of a long tradition and, at the same time, a synthesis of intellectual currents of the early 19th century.) In other words, if we associate 'positivism' with Comte's particular definition, we might be forced to abandon the term to describe certain trends in linguistic theory. It appears, therefore, that we must look for an understanding of the term that would allow us to include a certain approach to language which is not directly inspired by Comte's work.

1.3 As hinted earlier (0.2), historians of linguistics have made use of expressions such as 'positive method', 'positivist conceptions', etc. (cf. Leroy 1967:30, 34; Jankowsky 1972:78, 171, etc.) without, however, mentioning Comte. Indeed, it appears that 'positivism' is a term used by later scholars to describe a certain intellectual attitude of previous generations of linguists or of opposing schools of thought. In other words, 'positivism' was not the term by which the Neogrammarians or their predecessors for instance described their own outlook on language or their method of linguistic analysis, but a term used *post rem* by others to characterize a philosophy of science which most of them disagreed with. As a result, the only definition of 'positivism' in linguistics found in the literature is that by a scholar who widely agreed with the idealist stance in linguistics taken by Karl Vossler (1872-1949) at the beginning of this century. I am referring to the general linguist and Indo-Europeanist Walter Porzig, who in 1928 gave the following definition:

By *positivism* we understand ... that scientific attitude which, taking the individual fact (*fait*) as the basic entity, considers the function of science to be the unequivocal co-ord-

ination (*ordre*) of all such facts. *Idealism*, on the other hand, looks upon the world as a structure of meaningful units, whose nature is determined by their function within the whole. Individual phenomena have their value in the positivist's eyes, because they exist; for the idealist, because they have meaning. (Porzig 1928:2-3)¹

During the 19th century, however, no such dichotomy was contemplated by linguists. Although, particularly in the first half of the past century, there were differing lines of linguistic thought (commonly associated with the names of Bopp, Grimm, and Humboldt, respectively), it is interesting to note that they all were opposed to the speculative, deductive and excessively philosophical approach characteristic of previous centuries. The next section is devoted to an analysis of linguistic views which I regard as representative of the 19th century, especially of the second half, when the science of language became an autonomous, professionalized discipline.

2.0 'Positivist' Trends in 19th-century Linguistics

2.1 It appears that a given period is imbued with a certain way of thinking when one finds its expression in places where one might not expect to find it. For example, in his posthumously published lectures dating from 1840 onwards, the classical philologist Friedrich Haase (1808-1867) attacks the work of his predecessors since they have been conceived under the influence of Kantian concepts and Hegelian philosophy. Thus he criticized the famous Gottfried Hermann (1772-1848) in the following terms:

Der Irrtum ist ausgegangen von dem Kantischen Standpunkte Hermann's Dadurch haben die Idiomata oder Figuren einen bloß negativen Sinn bekommen, den Sinn der *Gesetzwirrigkeit*, während sie in der That lebendige Gesetze der Sprache sind, aus ihrem Geiste geboren. Sie sind also in etwas *Positives* umzuwandeln, und wo sie nichts Positives enthalten, wegzuerwerfen. (Haase 1874:202; emphasis mine: KK)

We may gather from this criticism that, by the mid-19th century at least, a 'positivist', 'data-oriented' and empirically inclined approach to language had become generally accepted. Kant's philosophical system had cleared the way to a thorough understanding of the nature of scientific inquiry; his influence on 19th-century thought was all-pervasive and, as a result, it was no longer recognized as Kantian. By contrast, Hegel's *Naturphilosophie* had a de-

¹ Since the above translation (adapted from the one in Iordan & Orr 1937:87n) might not be an entirely satisfactory rendering of Porzig's statement, I would like to cite the original text (also found in Jankowsky 1972:228): "Unter *Positivismus* verstehen wir also diejenige wissenschaftliche Haltung, die, von der Einzeltatsache (*fait*) als letzter Gegebenheit ausgehend, die Aufgabe der Wissenschaft in der eindeutigen Zuordnung (*ordre*) aller Einzeltatsachen erblickt. Dagegen begreift der *Idealismus* die Welt als ein Gefüge von Sinneinheiten (Gestalten), deren Wesen erst

finite impact on the minds of many 19th-century thinkers, both in the natural and the social sciences; Karl Marx's economic theory is but one example.

2.2 Because we associate the linguistic work of Jacob Grimm (1785-1863) with the Romanticist movement in Germany, we might object to Jankowsky's (1972:78) characterization of his approach to language as 'empirical-positivistic', especially when reference is made to the first volume of his *Germanic Grammar* (1819), and not, for instance, to his voluminous *Wörterbuch*, which was completed only a century after he and his brother had started to work on this project. However, if we take a closer look at Grimm's *oeuvre*, we will quickly recognize his opposition to a philosophical, logicistic and aprioristic approach and his advocacy of a treatment of language which is based on linguistic form. Indeed, in the Preface to the first edition of his *Deutsche Grammatik*, Grimm stated explicitly:

Wird man sparsamer und fester die Verhältnisse der einzelnen Sprachen ergründen und stufenweise zu allgemeineren Vergleichen fortanschreiten, so ist zu erwarten, daß bei der großen Menge unsern Forschern offener Materialien einmal Entdeckungen zustande gebracht werden können, neben denen an Sicherheit, Neuheit und Reiz etwa nur die vergleichende Anatomie in der Naturgeschichte stehen. (Grimm 1819:xii)

Grimm's reference to Comparative Anatomy is not new; we find explicit statements suggesting that linguists should adopt the comparative anatomist's method in the work of Friedrich Schlegel, *Ueber die Sprache und Weisheit der Indier*, published more than ten years before the first volume of Grimm's *Grammar* (cf. Koerner 1980: 215-16, for relative quotations). But, unlike Schlegel (1772-1829), who was familiar with Cuvier's work, Grimm seems to be expressing little else than what appears to have been 'in the air', namely, that certain fields in the natural sciences had developed methods that could be adapted in some way by the linguistic researcher. The above quotation indicates that Grimm advocates an inductive, step-by-step approach based on a large amount of data.

In the Preface to the second edition of volume I of his *Deutsche Grammatik* (1822), Grimm made an explicit reference to Linnaeus' work in botany, to the extent that his reviewer, Georg Friedrich Benecke (1762-1844), urges other linguists to follow Grimm's example, 'in order to deserve well of the science of language as the followers of Linnaeus had done in the natural sciences' (Benecke 1822:2007f.) The attempt to imitate the natural sciences and, possibly, compete with their scientific rigour is evident from other passages in Benecke's review, for instance, when he says, commenting on this first volume of Grimm's *Grammar*, which is quite significantly devoted to phonology and morphology:

Eine solche Darstellung läßt sich nicht geben ohne die sorgfältigste und genaueste Untersuchung der ersten und einfach-

durch ihre Funktion innerhalb des Ganzen bestimmt wird. Das einzelne Phänomen gilt dem Positivismus, weil es ist, dem Idealismus, weil es einen Sinn hat."

sten Bestandtheile. Dieser Theil der Naturgeschichte - denn so haben wir nun die Grammatik ansehen gelernt - hat seine Anatomie, seine Physiologie, seine chemische Analyse, so gut wie die übrigen. (Benecke 1822:2002f.)

Grimm and Benecke appear to have been expressing little else than what was widely accepted in the early 19th century when the study of language was developing towards an autonomous discipline distinct from the study of literature, pedagogy, rhetoric, logic and other fields. 'Historische Grammatik' is regarded as nothing but 'Naturgeschichte', the development of language through time.

Franz Bopp (1791-1867), the acknowledged founder of Comparative Linguistics, wrote in his review of the second volume of Grimm's *Deutsche Grammatik* (1826):

Die Sprachen sind ... als organische Naturkörper anzusehen, die nach bestimmten Gesetzen sich bilden, ein inneres Lebensprinzip in sich tragend sich entwickeln, und nach und nach absterben. ... Eine Grammatik in höherem, wissenschaftlichem Sinne soll eine Geschichte oder Naturbeschreibung der Sprache sein; sie soll ... besonders aber naturhistorisch die Gesetze verfolgen, nach welchen ihre Entwicklung ... vor sich gegangen. (Bopp 1827:251)

Bopp, like Grimm and most of their contemporaries, shunned theory and only from time to time made a statement of a general nature. It is clear, however, that these founding fathers of comparative-historical linguistics were concerned with establishing the study of language as an independent discipline and that they were, in doing so, advocating a model for scientific research inspired by the natural sciences, in particular botany and comparative anatomy, especially in the form of osteology and paleontology. (For the naturalistic views of Rask, cf. Diderichsen 1976:261-66 *passim*.)

2.3 While the generation of Bopp, Grimm, Rask and others followed the natural scientists' example only to a small extent, the most influential linguist of the next generation, August Schleicher (1821-68), exploited the possible analogies in theory and method to a considerable, at times seemingly crude and unsophisticated, degree - at least from our present vantage point.

Nowadays we associate Schleicher with a biological view of language that was repudiated by the Neogrammarians during the 1870s and with theories many modern linguists have regarded as absurd. However, those exposing Schleicher to ridicule have neither made an effort to understand why he held the views he did nor realized that, despite certain premises that we now find unacceptable (and which many of his contemporaries did not agree with), it was he who established the methodological bases of historical-comparative linguistics on which the Neogrammarians and all generations following them have built (cf. Koerner 1981a, for details).

It is true that Schleicher was more of a synthesizer of prevailing modes of thought than an original thinker. However, it is clearly due to his synthesizing efforts that terms and concepts such as 'sound law', 'assimilation', 'dissimilation', 'family

tree', etc. (which all have a definitely naturalistic ring about them) have become a part of the linguist's technical language. And where the method of reconstruction is concerned, it is safe to say that it was Schleicher (and not the Neogrammarians, for instance) who developed this important tool of comparative-historical linguistics (cf. Koerner 1981c, for a detailed account of Schleicher's contribution).

In the present paper, our interest lies in his philosophy of science, the reasoning that led him to establish historical linguistics on a sure footing, not in the details of his system, and, of course, in the sources of his theoretical inspiration.

By 1850, when he was 29, Schleicher had firmly adopted the view that linguistics was not a 'historical' but a 'natural' science, the reason being that language was the product of evolution, of a development following natural laws, independent of the human will:

Wie die Naturwissenschaften, so hat auch die Linguistik die Erforschung eines Gebiets zur Aufgabe, in welchem das Walten unabänderlicher natürlicher Gesetze erkennbar ist, an denen der Wille und die Willkür des Menschen Nichts zu ändern vermögen. (Schleicher 1850:3)

In contrast to *Philologie*, an historical (and what we would term a social or 'geisteswissenschaftlich') discipline, *Linguistik* - and Schleicher seems to use the latter term for its morphological similarity with 'Botanik', 'Physik', and 'Mathematik' - is a natural science having to do with the observation, analysis, and comparison of living languages: the so-called 'dead' languages, such as Greek or Latin, are merely 'Petrefacten der Linguistik' in Schleicher's opinion.

Schleicher identifies phonology and morphology as the central areas of the linguist's concern. The development of language on these levels is subject to 'laws' independent of the speaker. Syntax and especially stylistics involve the conscious involvement of the human mind and, as a result, are relegated to the periphery of the linguist's attention. Indeed, stylistics belongs entirely to *Philologie* in Schleicher's view.

Although he recognizes the existence of a semantic component in each morphological element, Schleicher clearly directs his concern to the formal, structural part of language (1850:6-7). Indeed, the classification of languages on the basis of morphological criteria (already proposed by Friedrich Schlegel, his brother August Wilhelm as well as Wilhelm von Humboldt many years earlier) is one of Schleicher's major goals. In his *Die Sprachen Europas in systematischer Uebersicht* he offers a classification of all languages found on that Continent along morphological lines, arguing at the same time for a development of monosyllabic to 'agglutinative', and of 'agglutinative' to 'inflectional' ones. In a programmatic essay (Schleicher 1859), he introduced the term 'morphology' into linguistics and established a system of mathematical formulae to account for the variations within each of the three basic classes as noted in his (often first-hand) observations of language structure.

William Dwight Whitney (1827-94) lauded Schleicher's 'noteworthy attempt' (Whitney 1867:364-67), whereas H. Steinthal (1823-99), a Humboldtian 'mentalist' (as we may call him today), objected to this 'Mathematisierung der Sprachwissenschaft' (Steinthal 1860).

Already in his book of 1850, it is clear that Schleicher takes an empiricist position; observation and facts based on observation only are valid. While we may not subscribe to such an exclusive position nowadays, current practice by many modern linguists to rely on second- if not third-hand information may make the following remark by Schleicher (1850:21n) a welcome antidote:

Wer selbst linguistische oder überhaupt naturwissenschaftliche Studien gemacht hat, wird gewiss oft genug erfahren haben, dass alles Wissen ohne eigene Beobachtung, d.i. in der Linguistik ohne selbständiges Studium der betreffenden Sprachen, keinen Werth hat.

In his subsequent writings, including his attempt of 1860 to popularize the study of language among the educated classes, Schleicher does little more than reiterate his views. The linguist, now called 'Glottiker' (glottologist), is mainly interested in the 'organism' of language, its structure and its evolution, and not in its use. Like a Hegelian dialectic, Schleicher sees no essential difference between what he refers to as the 'Nebeneinander des Systems' and the 'Nacheinander der Geschichte' (Schleicher 1850:15; 1860:33, 47). Already in his first book published in 1848, Schleicher had taken the view that there is a 'material identity between history and system', and that the basic difference between the two is one of perspective or of presentation only (pp.4-5).

If we note Schleicher's emphasis on phonology and morphology, to the neglect of syntax — his 2-volume *Compendium der vergleichenden Grammatik der indogermanischen Sprachen* of 1861-62 treats only the first-mentioned levels of language — not to mention what he has to say about the study of the lexicon (e.g., Schleicher 1860:125-26)²; we may describe his treatment of language as 'materialistic' and 'positivistic', even though Schleicher (1863:8) denies the first characterization, and never mentions the second term in his writings. However, he is unabashed when it comes to expressing his scientific credo:

Die allerdings einseitige wissenschaftliche betrachtung der sprachlaute und sprachlichen formen, die ich mir zur lebensaufgabe gemacht habe, — ... — berührt nichts desto weniger das tief innerste wesen der sprache. (Schleicher 1861:460)

Schleicher argues that sound and form are most easily accessible and should form the foundation on which linguistic analysis may progress and investigate the *function* of these sounds and forms.

If we read Schleicher's work written before the appearance of the German translation of Darwin's *Origin of Species* (1859) in 1860,

² In a paper entitled "Das ansichsein in der sprache" of 1862, Schleicher argues that, in his view, "der gegensatz von inhalt

we will realize that Schleicher did not need Darwin to develop his naturalistic views of language and its development. Apart from the tradition in linguistics, especially the one connected with Bopp, of which he was very conscious, Schleicher - although it is not quite correct to say that he had "first been trained as a botanist" (Leroy 1967:15) - had a life-time interest in the non-theoretical, 'descriptive', natural sciences and had acquired a good knowledge of scientific method from the work of the botanist Matthias Schleiden (cf. Schleicher 1855). Indeed, in his 1863 essay, written in response to a suggestion by his colleague at Jena, Ernst Haeckel (1834-1919), that he read Darwin's work, Schleicher indicates that he had learned the meaning of 'Entwicklungsgeschichte' from Schleiden and others, and that he regards Darwin's theory as clearly indebted to Charles Lyell's theory of geology and as 'ein rechtes und echtes Kind unseres Jahrhunderts', indeed a necessary conclusion of previous work in the sciences (Schleicher 1863:10). When he states that 'observation is the basis of knowledge' and expresses his opposition to 'everything constructed in an a priori fashion' (ibid., 9), he is reiterating nothing but long-held convictions.

2.4 If I spent a considerable amount of time on a exposé of Schleicher's views, it is because his contribution to the development of linguistics is usually minimized and his theory of language (and the accompanying philosophy of science) distorted. Schleicher died too early to defend himself and to claim his priority, and the Neogrammarians had no interest in acknowledging their debt to his work. Indeed, as I have shown elsewhere (Koerner 1981a, 1981c), what is frequently associated in the literature with the work of the *Junggrammatiker* is by and large an extension of what I have called the 'Schleicherian Paradigm', a further articulation and exploitation of this theories, especially those connected with the so-called 'Stammbaum' and the principles of reconstruction of unattested proto-forms in comparative-historical linguistics, including the systematic use of 'starred forms'. When Schleicher wrote a fable in Indo-European, an entirely reconstructed hypothetical *Ursprache*, he was not simply offering a joke, as later generations of linguists have surmised, but was simply carrying his principles, his comparative method, to its logical conclusion (cf. Schleicher 1868).

The 'positivism' traditionally associated with the Neogrammarians (e.g., Leroy 1967:84; Jankowsky 1972:196f.) should first and foremost be connected with the work of Schleicher, as Bal (1966:37-39) suggests. Indeed, general linguistic theory was not — *pace* Her-

und form, wesen und erscheinung, geist und materie [ist] ein nur in der auffassungsweise bestehender, kein wirklich vorhandener". A year later, Schleicher characterized this view as 'monism': "Die Richtung des Denkens", he affirms in his 'open letter' to Haeckel, "läuft unverkennbar auf Monismus hinaus" (Schleicher 1863:8), an argument subsequently exploited by Haeckel and his Darwinistic followers.

mann Paul (1846-1921), the acknowledged theorist of the *junggrammatische Richtung* - was not the area in which the Neogrammarians excelled. Bal (1966:41) notes on their theories:

Mais la pratique des néogrammairiens différait considérablement de leurs théories et souvent contredisait même celles-ci. En fait, cette école marchait principalement sur les traces d'A. Schleicher et ses recherches sont marquées d'un esprit positiviste, mécaniste.

Bal refers to their emphasis on the 'sound laws', a principle developed especially by Schleicher,³ and their scant use of 'analogy' (which has to do with psychological rather than seemingly physical forces) as the 'ultimum refugium'. But the same could be said of many other positions the Neogrammarians took as representing a new departure. Thus, in their famous manifesto of 1878 - note that they called their new journal "Morphologische Untersuchungen" and not 'syntactic' or 'etymological' or 'semantic investigations' - Osthoff and Brugmann argued in favour of the study of the living languages (something practiced by Schleicher for example on many occasions), but in their practice they remained within 'the hypotheses-beclouded atmosphere of the workshop in which the original Indo-European forms are forged' (Lehmann 1967: 202) that they attacked. They continued to work on the basis of written forms and investigated the planes of phonology and morphology but scarcely syntax, and they ignored semantics as Schleicher had done.

In short, the neogrammarian movement constitutes little more than a continuation of the path established by Schleicher, even though they began to acknowledge the workings of psychological factors in language change. But the principle of 'analogy' had not been overlooked by Schleicher (cf. 1860:60-61, 171); indeed, he supervised a thesis by Jan Baudouin de Courtenay (1845-1929) devoted to this phenomenon in Polish (Baudouin de Courtenay 1869), for which Baudouin received a doctorate from the University of Leipzig in 1870.

If we investigate the work of the Neogrammarians closely, we would be justified, especially with regard to their methods of research as applied to Indo-European, to characterize it as 'positivistic'. The rigour with which they sought to analyse linguistic change, the 'exceptionlessness' which they claimed (especially in the early phase of their 'school') for the 'sound laws', the neglect of semantic studies, the disregard for spoken language and dialectology, etc., these all suggest that their attitude toward language was that of a narrow empiricism, indeed that of a 'physicalism', an extreme reliance on form and mechanistic principles. Jankowsky (1972:192) speaks of 'positivism in methodology', but we may extend this label to the Neogrammarians' philosophy of science as well.

³ Schleicher, in his *Compendium* (1861-62 I, 15-16), stated very explicitly that he, Curtius, and others subscribed to the principle of 'strict adherence to sound laws' (cf. Lehmann 1967:87).

2.5 I have not found a single reference to Comte in the work of the Neogrammarians. This may not be surprising if we gather that a work of some 384 pages devoted to the impact of Comte's positivism in 19th-century Europe has only one single mention of the study of language, namely a statement to the effect that "the so-called 'positivist' movement in German aesthetics and philology had nothing to do with Comte; it was merely a quest for objective laws in reaction against metaphysical teleology" (Simon 1963:250). There is no mention of any 19th-century linguist or school of linguistics.

However, there was a group of scholars in France which not only followed Schleicher's theory of language but also tried to incorporate Comte's philosophy of science. They created a journal, "Revue de Linguistique et de Philologie comparée", in 1867, whose subtitle ran (at least until 1871) "Recueil trimestriel de documents pour servir à la *science positive* des langues, à l'ethnographie, à la mythologie et à l'histoire" (emphasis added: KK). It ceased publication only in 1916. I mentioned the names of several members of this group at the beginning of this paper (1.2), and refer the reader to a section in another paper of mine (Koerner 1981b, sect. 1.5) for further details. Needless to add that it would be of interest to the historian of linguistics, especially in the light of recent developments in biology and neurology, to investigate what Schleicher and, following him, Abel Hovelacque (1876, chap.2) had to say about the relationship between language development and the evolution of the human brain.

3.0 *Pendulum Swings in Linguistic Theory*

3.1 Linguistics, especially during the 19th century when scholars tried to establish the study of language as an autonomous discipline, has traditionally been influenced by the particular intellectual climate of a given period. The past century illustrates this very well. For instance, during the period roughly between 1800 and 1860, botany, comparative anatomy, and geology served as pilot sciences, and many of the first two generations of comparative-historical linguists regarded them as models to imitate, especially with respect to methodological questions. Since these other sciences were empirical, deductive and 'positivistic' in approach, it can be expected that linguistics had a similar outlook.

Later, from the 1860s onwards, disciplines such as sociology, psychology, and political economy became established fields of scientific inquiry. Since these disciplines developed during about the same period as linguistics, it is not surprising that they too had been under the influence of the natural sciences and adopted a fairly positivistic, materialist and mechanist, outlook. However, under the influence of philosophy, which attacked the all-pervasiveness of 'positivism' - cf. the voluminous inquiry of 1879-84 by Ernst Laas (1837-85) - the awareness grew among late-19th century scholars in many fields that there were in fact two large classes of sciences, the natural sciences and the human, social or intellectual sciences, and that they differed both in terms of the

nature of the object of inquiry and the method of analysis.

Frequently, the clear distinction between the *Geisteswissenschaften* and the *Naturwissenschaften* is associated with the work of Wilhelm Dilthey (1833-1911) of 1883, *Einleitung in die Geisteswissenschaften*. However, at least where linguistics is concerned, it could be shown that a number of 19th-century scholars never subscribed to the view that linguistics was a natural science and that the linguist should confine himself to questions of structure and its change. Once this strand of linguistic thought, which I have called the 'Humboldtian tradition' (Koerner 1977), becomes more prominent because of a general change in the intellectual climate, we note the occurrence of what I term a 'pendulum swing' (cf. Koerner 1981d).

Such a change in the climate of opinion does not come about overnight. There are 'hold-outs' as well as those who try to compromise between two opposing views of science. The French linguist Lucien Adam (1833-1918), who was associated with the group of scholars connected with the "Revue de Linguistique" (see 2.5 supra), for instance, offered such a compromise by stating that linguistics, by virtue of its object, was an 'historical' (i.e., a social and intellectual) science, but a natural science with respect to its methodology (Adam 1881:395).

For Hermann Paul, author of the *Prinzipien der Sprachgeschichte*, which ran through five editions between 1880 and 1920, linguistics was a cultural and social discipline, even though he advocated a clearly empirical approach to language analysis. Berthold Delbrück, another associate of the neogrammarian circle, held similar views in his *Einleitung in das Sprachstudium*, which had in fact six editions during the same period. Curiously enough, their positions concerning the place of linguistics and the methods of inquiry had little effect on the day-to-day research of their colleagues who continued the one-sided, form-oriented tradition established by Schleicher and his generation.

That this positivistic orientation in comparative-historical linguistics had gone dry by the turn of the century may be gathered from two sides, from within and from without. Antoine Meillet (1866-1936), the most distinguished French comparativist, expressed already in 1903 that linguistics 'seems to have come to a point beyond which no further progress is possible' (Leroy 1967: 34). From 1902 onwards the neogrammarian school came under attack from a generation of scholars who disagreed with the one-sided treatment of language and the neglect of meaning and function of language. They revived in a way the Humboldtian tradition with its emphasis on literary, creative language. Their leaders were Benedetto Croce (1866-1952) in Italy and Karl Vossler (1872-1949) in Germany. Croce, a philosopher, argued that the centre of linguistic research should be aesthetics, the expressive side of language use; Vossler, a Romance scholar, wanted to embed the study of language in an overall study of culture and literature, areas traditionally neglected by historical linguists.

Croce's *Estetica come scienza dell'espressione e linguistica generale* (1902; 4th rev. ed., 1912) and Vossler's writings from 1904 onwards paved the way for schools of thought in Germany and Italy which were particularly influential in the period between the two world wars. (For a detailed account, see Jordan & Orr 1937:86-143; Christmann 1972.)

3.2 Despite the heavy attacks on 'positivism' in the work of the Neogrammarians by Vossler (1904) and others, historical-comparative linguists continued to work within the framework established during the 19th century, though post-Saussurean structuralist principles began to infiltrate the field. Yet structuralism in its narrow form is hardly less positivistic as we may gather from the schools of Hjelmslev in Europe and Bloomfield in America.

Although there is little indication that the Neo-Positivism of the Vienna Circle of the 1920s and 1930s had a direct and immediate impact on linguistics, the work of several of its associates could not have remained unnoticed especially since it concerned itself with language (e.g., Wittgenstein 1922; Carnap 1937), albeit a restricted, logical type of language. Perhaps the most important contributions of the Vienna Circle lay in the philosophy of science and the attention they paid to questions of scientific or meta-language, activities which have had a wide-spread influence both in Europe and, from the late 1930s onwards, in North America.

But positivism in various forms had already taken root in North American science, in physics as well as in psychology for instance, compare John Broadus Watson's (1878-1958) behaviorism (1914) or Albert Paul Weiss (1879-1931) brand of it in psychology (cf. Weiss 1929), and Percy William Bridgman's (1882-1961) operationalism (Bridgman 1927), which, though independent of the Vienna Circle, takes a fairly similar positivistic view of physical concepts and theories.

It is generally known that Leonard Bloomfield (1887-1949) subscribed to Weissian behaviorism from the mid-1920s onwards (after having applied Wundtian psychology in his first introduction to linguistics of 1914). We may also remember that he had received his training in Indo-European historical linguistics at the University of Leipzig, and thus had absorbed the positivistic method of the Neogrammarians which, by the way, he never abandoned (cf. Bloomfield 1933:281ff.). In 1939, he contributed an essay on linguistics to the *International Encyclopedia of Unified Science*, a forum established by emigré members of the Vienna Circle during the late 1930s. In short, Bloomfield adhered to a philosophy of science that was definitely positivistic.

In contrast to the school of linguistic thought established by Edward Sapir (1884-1939), the followers of Bloomfield followed an approach to language much in line with Bloomfield's synthesis of 1939. Indeed, the work of many of his pupils and followers exhibits a much narrower view of language, to the extent that little, if any, attention is given to syntax, and, especially during the 1940s and 1950s, hardly more to questions of semantics. In a way

similar to the work of Schleicher and the Neogrammarians, almost exclusive attention is given to questions of phonology and morphology, with the added feature that historical considerations are replaced by ahistorical, structural ones, thus narrowing down the scope of scientific investigation even further (cf. Koerner 1970 for an historical account of the Bloomfieldian tradition).

3.3 With Bloomfieldians dominating the field (and the Sapirians representing the competing, but much less powerful undercurrent), we could imagine that in some point in time the pendulum would swing in another direction, not only in linguistics but also in other disciplines, including psychology and even physics.

The mechanist-behaviorist vogue in psychology and linguistics was an American phenomenon; Europeans never participated in it, and those who had moved to North America before, during or after the Second World War sowed the seed for its replacement by 'mentalistic' conceptions of language. It would be incorrect to say that this was done by Chomsky's attack on Skinner in 1959, but the impact it had on the minds of many contemporaries may be taken as an indication that there was a wide-spread feeling that Chomsky's polemics was entirely justified: human behaviour and, especially, language is a much more complex phenomenon than had been thought of by many American scholars for several decades.

4.0 *Concluding Remarks*

The present paper, especially the third section concerned with the 20th century, is but a preliminary sketch of positivist conceptions in linguistics. We have noted that there has been little influence of Comte's philosophy of science on 19th-century linguistics, at least in a direct way. But in as far as Comte expressed and synthesized a general intellectual trend in 19th-century thought, we may be justified in using 'positivism' as a cover term for attitudes of scientists and scholars which, in a minute analysis, we might identify as 'scientism', 'materialism', 'historicism', and 'empiricism' in the 19th, and 'mechanism', 'objectivism', 'operationalism', 'instrumentalism', or 'behaviorism' in the 20th century.

All these 'isms' have in common an excessive reliance on 'observation', on 'facts', and a tendency to mistake (rigorous) methodology for theory. They all share a distrust in a deductive approach which starts from hypotheses rather than from observation and inductive generalizations.

In linguistics, the distinction between these two contrasting positions cannot always be drawn neatly; it appears that most linguists are either not interested in or quite incapable of rendering an account of what they are doing. Yet even if they do, one may discover inconsistencies, not to say discrepancies, between what they say they are doing and what they are really doing. Thus an impartial analyst of the work in transformational-generative grammar may well detect many mechanistic features in practice which have been denied to exist in theory.

REFERENCES

- Adam, Lucien. 1881. "La linguistique est-elle une science naturelle ou une science historique?". *Revue de Linguistique et de Philologie comparée* 14.373-95.
- Bal, Willy. 1966. *Introduction aux études de linguistique romane, avec considération spéciale de la linguistique française*. Paris: M. Didier.
- Baudouin de Courtenay, Jan. 1869. "Einige Fälle der Analogie in der polnischen Deklination". (Adalbert Kuhn and August Schleicher's) *Beiträge zur vergleichenden Sprachforschung* 6.19-88.
- Benecke, Georg Friedrich. 1819. Review of Grimm 1819. *Göttingische gelehrte Anzeigen*, 67. Stück (26 April 1819), 665-72.
- , 1822. Review of Grimm 1822. *Ibid.*, 201. Stück (19 December 1822), 2001-2008.
- Bloomfield, Leonard. 1914. *An Introduction to the Study of Language*. New York: H. Holt & Co. (New ed., with an introduction by Joseph F. Kess, Amsterdam: J. Benjamins, 1982.)
- , 1933. *Language*. *Ibid.* [There exist many reprints.]
- , 1939. *Linguistic Aspects of Science*. (= *Foundations of the Unity of Science* 1:4.) Chicago: Univ. of Chicago Press.
- Bopp, Franz. 1827. Review of Grimm 1826. *Jahrbuch für wissenschaftliche Kritik* (February), 251-303, (May), 725-59.
- Boretzky, Norbert. 1977. *Einführung in die historische Linguistik*. Reinbeck near Hamburg: Rowohlt.
- Bridgman, Percy William. 1927. *The Logic of Modern Physics*. New York: Macmillan. (Repr., 1951.)
- Christmann, Hans Helmut. 1972. *Idealistische Philologie und moderne Sprachwissenschaft*. Munich: W. Fink.
- Comte, Auguste. 1830-42. *Cours de philosophie positive*. 6 vols. Paris: Borrari & Droz.
- Croce, Benedetto. 1902. *Estetica come scienza dell'espressione e linguistica generale*. Milan: R. Sandron. (4th rev. ed., 1912.)
- Darwin, Charles. 1860. *Ueber die Entstehung der Arten im Tier- und Pflanzen-Reich durch natürliche Züchtung*. Transl. by Georg Heinrich Bronn. Stuttgart: E. Schweizerbart. (2nd rev. ed., 1863.)
- Delbrück, Berthold. 1880. *Einleitung in das Sprachstudium: Ein Beitrag zur Methodik der vergleichenden Sprachforschung*. Leipzig: Breitkopf & Härtel. (6th rev. & enl. ed., 1919.)
- Diderichsen, Paul. 1976. "Rasmus Rasks Auffassung der Sprachentwicklung und der Sprachstruktur". *Ganzheit und Struktur: Ausgewählte sprachwissenschaftliche Abhandlungen* by P. Diderichsen, 254-72. Munich: W. Fink.
- Dilthey, Wilhelm. 1883. *Einleitung in die Geisteswissenschaften*. Berlin: Duncker & Humblot.
- Grimm, Jacob. 1819. *Deutsche Grammatik*. Part I. Göttingen: Dieterichsche Buchhandlung.
- , 1822. *Deutsche Grammatik*. Part I, 2nd rev. ed. *Ibid.*
- , 1826. *Deutsche Grammatik*. Part II. *Ibid.*
- Haase, Friedrich. 1874. *Vorlesungen über lateinische Sprachwissenschaft, gehalten ab 1840*. Vol. I: *Einleitung und Bedeutungslehre*.

- Ed. posthumously by Friedrich August Eckstein. Leipzig: Simmel & Co.
- Hovelacque, Abel. 1876. *La Linguistique*. (= *Bibliothèque des Sciences contemporaines*, 2.) Paris: C. Reinwald. (2nd rev. ed., 1877; 4th ed., n.d.[1888]; 5th ed., Paris: A. Costes, 1922.)
- Jordan, Iorgu. 1937. *An Introduction to Romance Linguistics, its schools and scholars*. Revised, transl. and in parts recast by John Orr. London: Methuen & Co. (2nd ed., with a supplement by Rebecca Posner, Oxford: B. Blackwell, 1970.)
- Jankowsky, Kurt R. 1972. *The Neogrammarians: A re-evaluation of their place in the development of linguistic science*. The Hague: Mouton.
- Koerner, E(rnst) F(rideryk) K(onrad). 1970. "Bloomfieldian Linguistics and the Problem of 'Meaning': A chapter in the history of the theory and study of language". *Jahrbuch für Amerikastudien* 15.162-83. (Repr. in E. F. K. Koerner, *Toward a Historiography of Linguistics*, 155-76. Amsterdam: J. Benjamins, 1978.)
- . 1975. "European Structuralism - early beginnings". *Current Trends in Linguistics* ed. by Thomas A. Sebeok, vol. XIII: *Historiography of Linguistics*, 717-827. The Hague: Mouton.
- . 1977. "The Humboldtian Trend in Linguistics". *Studies in Descriptive and Historical Linguistics: Festschrift for Winfred P. Lehmann* ed. by Paul J. Hopper, 145-58. Amsterdam: J. Benjamins.
- . 1980. "Pilot and Parasite Disciplines in the Development of Linguistic Science". *Folia Linguistica Historica* 1.213-224.
- . 1981a. "The Neogrammarian Doctrine: Breakthrough or Extension of the Schleicherian Paradigm. A problem in linguistic historiography". *Ibid.* 2.157-78.
- . 1981b. "Positivism in 19th-Century Linguistics". *Rivista di Filosofia* 73 (in press).
- . 1981c. "The Schleicherian Paradigm in Linguistics". Introd. article to A. Schleicher, *Die Sprachen Europas in systematischer Uebersicht*, new ed. Amsterdam: J. Benjamins (in press). [Revised version in *General Linguistics* 22.1-39 (1982).]
- . 1981d. "Models in Linguistic Historiography". *Forum Linguisticum* 5 (in press).
- Laas, Ernst. 1879-84. *Idealismus und Positivismus: Eine kritische Auseinandersetzung*. 4 vols. Berlin: Weidmann.
- Lehmann, Winfred P., ed. & transl. 1967. *A Reader in Nineteenth-Century Historical Indo-European Linguistics*. Bloomington & London: Indiana Univ. Press.
- Leroy, Maurice. 1967. *Main Trends in Modern Linguistics*. Transl. by Glanville Price. Oxford: B. Blackwell; Berkeley & Los Angeles: Univ. of California Press.
- Medina, José Ramón. 1978. "Les difficultés théoriques de la constitution d'une linguistique générale comme science autonome". *Langages* 49.5-23.
- Mises, Richard von. 1951. *Positivism: A study in human understanding*. Transl. from the German by Jerry Bernstein and Roger G. Newton. Cambridge, Mass.: Harvard Univ. Press. (Repr., New York: Dover Publications, 1968.)

- Paul, Hermann. 1880. *Prinzipien der Sprachgeschichte*. Halle/S.: M. Niemeyer. (5th rev. ed., 1920; 8th ed., Tübingen: M. Niemeyer, 1970.)
- Porzig, Walter. 1928. "Sprachform und Sprachbedeutung". *Indogermanisches Jahrbuch* 12.1-20.
- Posner, Rebecca. 1967. "Positivism in Historical Linguistics". *Romance Philology* 20.321-31.
- Rey, Alain. 1971. "La théorie positiviste des langages: Auguste Comte et la sémiotique". *Semiotica* 4.52-74.
- Schlegel, Friedrich. 1808. *Ueber die Sprache und Weisheit der Indier: Ein Beitrag zur Begründung der Alterthumskunde*. Heidelberg: Mohr & Zimmer. (New ed., with an introd. article by Sebastiano Timpanaro, Amsterdam: J. Benjamins, 1977.)
- Schleicher, August. 1848. *Zur vergleichenden Sprachengeschichte*. Bonn: H. B. König.
- , 1850. *Die Sprachen Europas in systematischer Uebersicht*. Ibid. (New ed., with an introd. article by Konrad Koerner, Amsterdam: J. Benjamins, 1982.)
- , 1855. "Kurzer Abriss der Geschichte der slawischen Sprache". *Oesterreichische Blätter für Literatur und Kunst*, No. 19, 7 May 1855. (Rev. version in *Beiträge zur vergleichenden Sprachforschung* 1.1-27, 1856.)
- , 1859. *Zur Morphologie der Sprache*. St. Petersburg: Eggers & Co.; Riga: S. Schmidt; Leipzig: L. Voss.
- , 1860. *Die Deutsche Sprache*. Stuttgart: J. G. Cotta. (2nd ed., prepared by Johannes Schmidt, 1869; 3rd ed., 1874.)
- , 1861. "Zur morphologie der sprachen". *Beiträge zur vergleichenden Sprachforschung* 2.460-63.
- , 1861-62. *Compendium der vergleichenden Grammatik der indogermanischen Sprachen*. Weimar: H. Böhlau. (3rd ed., revised by Johannes Schmidt and August Leskien, 1870; 4th ed., 1876.)
- , 1862. "Das ansichsein in der sprache". *Beiträge zur vergleichenden Sprachforschung* 3.282-88.
- , 1863. *Die Darwinische Theorie und die Sprachwissenschaft: Offenes Sendschreiben an Dr. Ernst Hæckel ...*. Weimar: H. Böhlau. (Repr. in *Nova Acta Leopoldina N.F.*, No.218, 377/378 to 393, 1975.)
- , 1868. "Eine fabel in indogermanischer ursprache". *Beiträge zur vergleichenden Sprachforschung* 5.206-208.
- Seidel, Eugen. 1976. "Der Positivismus in der Sprachwissenschaft". *Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung* 29.503-505.
- Simon, Walter M. 1963. *European Positivism in the Nineteenth Century: An essay in intellectual history*. Ithaca, N.Y.: Cornell Univ. Press.
- Steinthal, Heymann. 1860. "Mathematische Sprachwissenschaft". *Zeitschrift für Völkerpsychologie und Sprachwissenschaft* 1.432-435.
- Vossler, Karl. 1904. *Positivismus und Idealismus in der Sprachwissenschaft: Eine sprachphilosophische Untersuchung*. Heidelberg: C. Winter.
- , 1905. *Sprache als Schöpfung und Entwicklung: Eine theoretische Untersuchung mit praktischen Beispielen*. Ibid.

- Watson, John Broadus. 1914. *Behavior: An introduction to comparative psychology*. New York: H. Holt & Co.
- Weiss, Albert Paul. 1929. *A Theoretical Basis of Human Behavior*. 2nd ed. Columbus, Ohio: R. G. Adams & Co. (1st ed., 1925.)
- Whitney, William Dwight. 1867. *Language and the Study of Language*. New York: Scribner, Armstrong & Co.; London: Trübner & Co. (3rd ed., augmented by an analysis, 1870.)
- Wittgenstein, Ludwig. 1922. *Tractatus Logico-Philosophicus*. Introduction by Bertrand Russell. London: K. Paul, Trench, Trübner & Co. (There exist many reprints, with minor corrections.)

THE BIFURCATION OF LINGUISTICS

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What defines an academic discipline? Certainly it is more than just the object under investigation. While that is, indeed, the dominant factor, separating, for example, physics from sociology, it does not in all cases provide a sufficient criterion. Most disciplines range so widely over their chosen subject matter that such a basis rarely is enough to separate a given discipline from its near neighbors. Between physics and chemistry, for example, there is such overlap in the objects they study that they cannot be distinguished by that criterion alone. Refining the criterion to include the particular aspect of the subject matter will not suffice either. Both theology and philosophy deal, in part, with the same aspects of the human experience. The difference between them lies in the questions they ask about that subject matter and in the evidence that they accept in answer to those questions. These two factors must be added to the subject matter itself to define the discipline.

Applying these criteria to language, we can easily separate linguistics from its close relatives, literary criticism and comparative philology. We can even separate descriptive or synchronic linguistics from historical linguistics, treating these as closely related, yet distinct. What is striking is that we can go even further within descriptive linguistics. In recent years there have developed approaches to language study so different in the questions they ask, so different in the evidence they consider, that we need now to deal with the existence of two disciplines, each calling itself linguistics, but no more alike than physics and chemistry or philosophy and theology.

To illustrate this divergence I would like to consider two discussions of the English verb: "The English Verbal Group" by Halliday (Kress 1976, pp. 136-158) and "Autonomous Syntax and the Analysis of Auxiliaries" by Pullum and Wilson (1977). These two studies have several advantages for our purposes. They deal with exactly the same data base, namely the English verb, both giving special attention to the auxiliary. The Halliday piece is representative of his work, making explicit many of the principles on which his approach operates. And the Pullum and Wilson study is representative of transformational-generative grammar in general, for the authors, while advocating a position generally associated with generative semantics, attempt to show that their conclusions follow necessarily from the assumptions of autonomous syntax. Of

course, it will not be possible here to reproduce fully all of the arguments in both articles. But I will review those features of each that identify the kinds of questions asked and evidence considered.

We may begin with Pullum and Wilson. They argue that all auxiliaries, including modals, are to be regarded as initial structure main verbs, and that postulation of the category AUX has no empirical support. They first summarize the traditional arguments for maintaining a separate AUX category, and they then argue that the characteristics that set apart the auxiliaries can also be attributed to certain main verbs. The auxiliaries thus appear as members of a special sub-class of verbs, but this is only one of a number of such sub-classes. They further note that no transformations ever refer crucially to the AUX node, which thus appears to be totally redundant.

Pullum and Wilson next consider several arguments that deal with the auxiliary, all adduced by proponents of autonomous syntax. These arguments deal with such phenomena as subject-auxiliary inversion, the interpretation of epistemic modals, and affix (and/or tense) hopping. In each case they attempt to show that the analysis, when pushed to its conclusion, actually supports a treatment of auxiliaries as initial structure verbs. Finally, Pullum and Wilson present a set of rules which meet all the conditions that they have set and which treat all auxiliaries as initial structure verbs.

When we look at Halliday's study, we find a totally different approach. He is "concerned with identifying the verbal group and its various categories such as those of tense, mood and the like." This would appear to be nothing more than a structuralist, or even pre-structuralist analysis of surface forms. But there is more to it than this. Halliday also deals with multiple levels of structure and multiple systems operating simultaneously: "It will be seen from the preceding section that where complication arises in the verbal group it is in part due to the fact that the way in which a particular verbal group is built up does not directly reflect the choices that have been made in the various systems: its morphology, in other words, does not directly reflect its syntax." Further, this paragraph suggests the central interest of systemics: the choices that are made in the production of a given utterance. These are not simply the lexical choices one would think of in a slot and filler approach. One must, for example, choose a particular tense, present, past, or future, as reference point. One must then choose whether to specify another tense relative to the first, and if so, which it is to be. The process may continue so that we could potentially have something like present in past in future in past in future, realized, for example, by will have been going to have been taking. The principle undertaking of Halliday's study, then, is to identify the choices, for example the temporal choices, that the speaker

may or must make, to identify the forms of the verbal piece, and to establish correlations between various choices and various forms.

It is clear, then, that the data in both these studies are essentially the same. Pullum and Wilson consider a wider range of modals and semi-auxiliaries, while Halliday considers structures of greater complexity. But these differences are minor. It is also clear that, on the surface at least, both articles ask the same question, namely "Where do these verb structures come from?" The difference lies in the interpretation of the question, a difference so important that on closer inspection there turn out to be two totally different questions being asked. When Pullum and Wilson ask where, they are asking about the deep structure for such phrases. When Halliday asks where, he is asking about the deep grammar. And between deep structure and deep grammar there is all the difference in the world.

Deep structure, by whatever other name it may be known, is, like the surface structure to which it is related, a formal grammatical entity. It is autonomous, not in the usual sense of autonomous syntax, but as the grammar as a whole is autonomous. A question about deep structure is a question entirely internal to the grammatical form. In these terms, the source of one grammatical structure is found in another grammatical structure at a different level.

It is on just this last point that deep grammar differs from deep structure. In Halliday's approach the grammar as a whole is not autonomous. The deep grammar is described in terms of the choices that the speaker makes in producing an utterance. Deep grammar thus provides a link between the grammatical system itself and the user of that system. The speaker and his choices are thus part of the overall investigation.

From the foregoing it should be clear that Pullum and Wilson on the one hand and Halliday on the other are in fact asking two totally different questions. Pullum and Wilson, as general representatives of transformationalists, are asking this: What kinds of abstract structures should we posit from which the surface forms of the verb may be derived? What are the formal categories in these abstract structures? What kinds of rules can be written to relate one structure to another. Halliday, on the other hand, is asking something quite different: What are the surface forms of the verbal piece and how are they arranged? What systematic choices does the speaker make in selecting one form or another? How are these choices to be related to the resulting surface forms? Additionally, the kinds of evidence adduced or adduceable will be different. Transformationalists will consider as evidence sentences, regardless of context, and the patterns found therein. Grammatical and ungrammatical sentences will be set side by side, and generalizations will be

formulated based on the patterns they show. A consideration of the speaker's choices, on the other hand, will require a very different kind of evidence. The utterances will have to be contextualized in the social situation in which the speaker finds himself. The total, contextualized linguistic behavior will provide the relevant data for determining what the speaker's system (in the technical sense) is.

What then, are we to make of these differences? I think several conclusions may safely be drawn. The first is that we are, indeed, dealing here with two different disciplines. They clearly must be closely related disciplines, just as chemistry and physics or theology and philosophy are closely related. But they still must be kept distinct, for the questions they ask and the evidence they consider are of very different sorts. The second conclusion is that if they are different disciplines, arguments over which approach (if either) is right and why the other is wrong have been badly misplaced. Such arguments are valid only if one can legitimately say, "For such and such reasons you ought not to be doing what you are doing." But a statement like this is valid only when applied within one's own discipline. It may not legitimately be applied to any other discipline. This implies yet a third conclusion, that each side needs to be open to the insights offered by the other, just as a physicist cannot afford to ignore the chemist's results and the theologian must take into account the analyses of the philosopher.

There remains one final question that has to be considered, though no satisfactory answer will be forthcoming. Which of these disciplines is linguistics? Most assuredly each will want the title for itself, and each will have arguments to advance. The transformationalists may well claim that a discipline, to be distinct from others, must have a way of setting its own boundaries. Since the subject matter of linguistics is language studied for its own sake, only a line of inquiry that preserves the autonomy of language structure can properly assume the name. Anything else will be hyphenated linguistics, an ancillary discipline, or even a branch of some totally separate area, such as sociology or psychology.

A counter argument is also possible. Linguistics is the study of natural language, the emphasis being on natural. It is thus distinct from the study of formal language systems, which is the province of a branch of mathematics. If linguistics is to be kept distinct from mathematics, the natural element in language must be emphasized; and the only way to emphasize that natural element is to concentrate on the language in use, to look at the speaker using language for social purposes, to consider the full contexts of the utterances.

Those who are familiar with my work will know that my

sympathies lie with the latter position. But I would like to point out here that terminological debates such as over what really constitutes linguistics are really matters of definition. As such they are of rather little importance so long as we are clear on the nature of the undertaking we are engaged in and clear about the assumptions that underlie our work. I raise the issue here simply because past suggestions that what another person is doing is not linguistics have led to denigration of studies done in a framework different from our own. It is that denigration I wish to combat with the recognition that, whatever the labels that may be applied to them, there are, in fact, two clearly distinct disciplines being practiced under the same name. I would hope that this recognition will increase at least a little the mutual respect among the practitioners of these disciplines.

Bibliography

Kress, Gunther (ed.) (1976), Halliday: System and Function in Language. London: Oxford University Press

Pullum, Geoffrey, and Deirdre Wilson (1977), "Autonomous Syntax and the Analysis of Auxiliaries." Language 53.741-788.

COMMUNICATIVE AND OTHER COMPETENCES: A SYSTEMATIZATION*

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Competence is a fundamental concept underlying much of modern linguistics, yet since Chomsky's (1965) introduction of the term not much progress seems to have been made in determining how much and exactly what it involves. In fact, the proliferation of kinds of competence and terms for them has only served to obscure matters further. The gravity of this problem is brought to the fore when we consider that the notion of competence in essence defines the object of study of linguistics, and through it the field itself.

We will adopt a metatheoretical approach to the consideration of this topic, comparing theories or models to see how they differ and what they have in common as a first approximation to what competence involves. We are assuming, for the purposes of this paper, the mentalist goals and empiricalist methods that most follow Chomsky in believing should characterize modern linguistics without, however, questioning the validity of these assumptions. Were we to assume otherwise this discussion would take an entirely different direction.

I. We have used "competence" thus far in its widest, vaguest sense in linguistics: the implicit, underlying knowledge necessary for language, as opposed to the form in which we have access to that knowledge: performance or observable language behavior. In metatheoretical terms, this is the distinction between an unobservable object of study and the observable phenomena which we postulate to be systematically related to it. Through this relation we justify our study of the observables to understand the unobservable object. The relations shown in Figure 1 are obtained from this analysis:

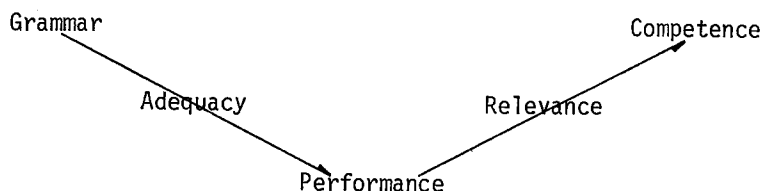


Figure 1

The problem of characterizing knowledge of language is thus two-fold. On the one hand, it has to be decided through continuous negotiation which observable phenomena need to be studied to understand the unobservable object (relevance). On the other hand, these phenomena must be accounted for in a systematic fashion (adequacy). On this view, the grammar is to be adequate only with respect to relevant observable language behavior. A theory of adequacy defines the relation between the grammar and the data it accounts for; a theory of relevance defines the relation between the data and the object of study. Seen in this light, the distinction is not new and the use of competence to mean everything that is taken as crucial to the explanation of knowledge of language and performance for everything else (cf. Gopnik, 1974) is quite misleading. Undoubtedly, we only have access to competence through performance; the matter of degrees of relevance is another.

The question of how to account for the data will not concern us here, for the theory of verification and the necessity of a discovery procedure are very thorny issues. For us the question of relevance is part of defining competence. To the extent that it is put forth to provide a systematic correlation between the observable behavior and the unobservable knowledge of language, we have a theory of relevance. This theory will "explain away" false starts, slurred pronunciation, etc. but must also indicate how certain variables of behavior are considered to be relevant so that between the grammar and the theory of relevance all of the observable data should be accounted for.

II. We can classify the kinds of knowledge involved in competence in terms of what is to be known and how it is to be known. It seems clear that any notion of knowledge of language must include in one form or another all three of the concepts of form, meaning and context to account for the most basic characteristics of performance. These are what is to be known and they have appeared in various guises in the major expressions of linguistic theory of this century, though different authors have accorded them different degrees of importance.

Saussure speaks of form and meaning but denies that they can be separated. When discussing context the analogy between *langue*/parole and Chomsky's competence/performance breaks down. Where *langue* is social knowledge, nonwillfull, passive and homogeneous (Davis, 1973: 17), competence is individual and active. Since we are considering knowledge of language in the individual (with the assumption that others will have the same knowledge); we must emphasize Saussure's notion of parole which is individual knowledge willfull (intentional), active (instances of willfull choice), and heterogeneous ("there is no pattern between social context and what is said," *ibid.*, p. 16). Saussure's stand on context in parole, then, seems to be that he recognizes a relation between parole and linguistic context, behavioral context and context of the communication system (hence his notion of 'value'), but without acknow-

ledging social and cultural context directly.

Bloomfield emphasizes form and equates meaning with context: "the meaning of a linguistic form [is] the situation in which the speaker utters it and the response which it calls forth in the hearer" (1933: 139). Since it is impossible to know everything about the situation, he reasons, we cannot know the meaning of a form and should concentrate on studying form alone. Even so, meaning was used, though in an impressionistic way, to distinguish the units of form. He also refers to some levels of context: linguistic, physical, and very indirectly to the functions of speech when he talks of displaced speech (p. 141). He mentions language varieties that are socially and geographically determined and instances of language as a kind of action.

Morris (1938) proposes a distinction quite similar to ours: syntax, semantics and pragmatics (the relation of signs to interpreters, p. 84). Where he, however, defines pragmatics as dealing with "all the psychological, biological and sociological phenomena which occur in the functioning of signs" (p. 108) and says that "pragmatical rules state the conditions in the interpreters under which the sign vehicle is a sign" (p. 113), we would prefer to say "pragmatical rules state the conditions in the interpreters (i.e. their knowledge) under which the sign vehicle (form) has a certain interpretation (meaning)," thus emphasizing that context presupposes the forms and meanings which are to be judged for appropriacy.

Chomsky, as well, speaks of all three: the syntactic and phonological components of form, the semantic component of meaning, and more recently, the addition of a pragmatic component. His treatment of context, however, takes into account linguistic context and more of the behavioral context with the addition of the pragmatic component since it underlies "the ability to use such [grammatical] knowledge along with the conceptual system to achieve certain ends or purposes" (1980: 7). The physical, social and cultural contexts are not considered relevant.

III. Even a very cursory examination of the form/meaning/context triplet will readily reveal at least one major difference. While form and meaning are what are actually manipulated in communication, context is not: it only seems to constrain the manipulations. This is akin to what Mathiot (forthcoming) calls the distinction between communicative tools and field structures, which are in turn an outgrowth of Bühler's *Feldgerät* (tool functioning in a field) and *Umfeld* (surrounding field). This simple observation seems to have escaped many authors who at least apparently presuppose that competence is one kind of knowledge.

This is a question of how something is to be known and we will make the distinction between active and passive competences, which parallels the Gestalt distinction between foregrounded and background information, where context is the background against which

form and meaning are foregrounded (Garvin, 1978: 341). Since some might want to see in this yet another interpretation of the competence/performance distinction, we would emphasize that these are subdivisions of competence alone, as it is defined above and that active competence is still implicit and unconscious. Explicit, conscious forms of competence would be metacompetences such as those that some teaching methods seek to develop in language learners. We will be talking about active competences (for form and meaning) which are a kind of knowledge *how*, knowledge manipulated in context to given ends, and so is foregrounded knowledge. These are opposed to passive competences (for context) which correspond to a kind of knowledge *that* which conditions the use of active competences.

In sum, the system that has been developing in modern linguistics is one that describes linguistic phenomena in terms of active knowledge of form and meaning and passive knowledge of context. In attempting to specify the system further, we might now ask: what are linguistic phenomena? Two definitions seem to be implicit in the literature:

- (a) Linguistic phenomena are those that can be described using propositions containing only linguistic variables.
- (b) Linguistic phenomena are those that can be described using propositions containing linguistic variables but that may also contain other kinds of variables.

Chomsky (1965) appears to prefer (a); this is his linguistic competence. Variables that are not linguistic simply do not belong to competence. This implies that knowledge of language is only active and only involves formal linguistic factors, leading to a consideration of only the linguistic context in analysis. This view is based on the belief that there is a language-and-only-language-specific component of knowledge that, though probably very small, is the defining characteristic of language.

The other option is (b) where, for example, a proposition relating social variables such as status to linguistic variables of form would count as a part of competence. This is the view of those linguists interested in interdisciplinary approaches to linguistics and permits us to pursue further the form/meaning/context triplet and the distinction between active and passive competences. This view is usually based on the implicit belief that language is best characterized as a synthesis of language-related systems, and so the tendency is to equate linguistics with macrolinguistics or language science, where the former position would see linguistics and microlinguistics as the same.

Possibly because of these different definitions, to some a comparison of Chomsky's linguistic competence and Hymes' communicative competence in the same terms may seem to be unwarranted. The two notions, however, play the same role in each author's framework: they are to capture what are seen as the essential features

of language.

IV. Let us consider our framework in more detail, as an approach to what Fillmore (1972: 284) calls a specialized branch of Incarnation Theory:

"Suppose we assume that some minor god wishes to cross the line, wishes to pass as a member of the human community. It has the standard Divine Sensorium by which it is able to perceive in an instant all of space and time, it is able to assume any form or to occupy and control any existing creature, but it needs to be told how to talk and what constraints it needs to impose on its unlimited potential in order not to give away its divine origin."

We would first suggest that he acquire a human body so as to be subject to the same biological constraints, then, if he planned to join the Toronto community for example, to read some treatise on Urban Ontario Culture to learn about the beliefs, values and mores of that community. Finally, we would suggest that he learn about Toronto society to be in the know about in- and out-groups, status, dominance, how to interact with others, etc. With a good, passive understanding of all of this he would be ready to read an English Language User's Manual (Toronto Edition), the organization of which is the problem we are discussing here.

The first volume would have to provide him with a Competence for Non-Verbal Communication: chapters would be about the forms, meanings and contexts of kinesics, proxemics, eye contact and might even include suggestions about choosing clothes, friends and belongings, all of which would have to be couched in terms of the biological, cultural and social constraints he already knows for him to make any sense of it. As linguists, however, we are more interested in the second volume on Competence for Verbal Communication. Let us examine a little more seriously some of the issues involved in defining the Competences for Form, Meaning and Appropriateness in verbal communication.

Competence for Form. Some authors seem to imply that CF only reaches to sentence level, and they then postulate a separate competence to deal with text (cf. Canale & Swain, 1980). This seems quite arbitrary and unnecessary since text-forms are forms just the same, and the knowledge involved is not of a different nature. CF in our view refers to the implicit knowledge of the formal properties of language and of a language, including all of the levels of analysis from phonology to text.

Taken as a mini-theory charged with explaining performance alone, CF would provide explanations in formal linguistic terms: X said Y because A is the verb and B is a noun. This kind of explanation alone is clearly not sufficient for our purposes.

Competence for Meaning. It appears to us that the links

between forms and concepts and the properties of this system of links are of a different nature than the properties of the system of forms, so for now we will disagree with Saussure and consider them separately. Most linguists presuppose a theory of reference and for this reason it rarely figures among linguistic competences. It is however an important part of our knowledge of language and the propositions describing it do involve linguistic variables. The basic properties of this system of links are catalogued by Katz (1972: 4-5). CM thus refers to these kinds of knowledge and taken alone provides explanations of performance in terms of meaning: X said Y because he meant Z. Since this knowledge of how to link forms and concepts presupposes them both, it is of a different logical type and should be accounted for separately. On the other hand, it is an active sort of knowledge and in this way we differ from Bloomfield by saying that it is different from context.

Competence for Appropriateness. Almost every author has a different view of which aspects or levels of context are essential to a description of knowledge necessary for language, and these differences are reflected in the notions of communicative competence that they subscribe to. Campbell & Wales (1970) include sociolinguistic factors, but not psycholinguistic ones. Others (Allen, 1978; Jakobovits, 1970; Palmer, 1978) have CC refer "exclusively to knowledge of rules of language use" (Canale & Swain, 1980: 5), apparently to complement a grammatical competence; and still others distinguish their notion of CC by not limiting the means to be used in communication: "the capacity to transmit messages by any and all linguistic and paralinguistic means" (Connors, 1980). Hymes (1972) includes sociolinguistic, psycholinguistic, grammatical and probabilistic factors in his notion, while Canale and Swain (1980), in an excellent review article, include grammatical competence, sociocultural rules of use and discourse competence (sociolinguistic competence), and a strategic competence with strategies for coping with communication breakdown in their own notion of CC.

Competence for Appropriateness both presupposes and defines CF and CM: without reference to forms and meanings we cannot speak of appropriateness; without context we can speak in only the vaguest terms of meanings and forms. We are using context in much the same sense as Saussure uses 'value': to indicate what characteristics forms and meanings acquire by virtue of being part of a system. This also points to the Gestalt view that language is more than the sum of its parts. The problem with language is that it can be said to be a part of several systems simultaneously; we will speak of seven of them as the levels of context.

1) linguistic context; the formal and semantic characteristics of the situation surrounding a given segment of speech,

2) physical context; the physical place, objects, noise level, etc. surrounding a given segment of speech,

3) system context; the characteristics of the communicative system or language,

4) social context; the social setting, roles, etc. of a segment of speech,

5) cultural context; the cultural setting, common knowledge, beliefs, mores, etc. surrounding a segment of speech,

6) behavioral context; the psychological limitations (general or state-dependent) of the interlocutors, and

7) biological context; the physiological limitations (general or state-dependent) of the interlocutors or community.

To a certain extent, those above depend on those below, i.e. the biological limitations determine the behavioral context, and so on. Since a case can be made for the relevance of each, maybe we should not be asking which levels are relevant but how relevant each one is in a given instance. It is only by relating forms and meanings to the different levels of context that our minor diety will be able to understand what they are and how to use and interpret them.

Although we have thus far considered form, meaning and context separately, we have hinted that we view them as interdependent and mutually defining. None can be fully explained without the others. A component of each competence that we have not yet mentioned is made up of the probabilistic rules that state to what extent given forms and meanings are actually used by the community, and this can not be neglected.

V. The chart in Figure 2 shows roughly how some notions of communicative competence compare within the framework we have sketched, and we will allow it to speak for itself.

	Canale & Swain	Savignon	Hymes	Jakobovits	Campbell & Wales
Competence for Non-Verbal Communication	X	X	?	-	-
Competence for Verbal Communication:					
Competence for Form	X	X	X	-	X
Competence for Meaning	X	X	X	-	X
Competence for Appropriateness:					
linguistic context	X	X	X	X	X
physical context	?	?	?	?	?
system context	?	?	X	?	?
social context	X	X	X	X	X
cultural context	X	X	X	?	?
behavioral context	X	?	X	-	-
biological context	-	-	?	-	-

Figure 2

VI. We can, though we have only given an indication of what this framework will consist of, draw some conclusions for applied linguistics from the assumptions we have made. From this point of view, form, meaning and context should not be dissociated. Instead, meanings for forms should always be given in terms of specific contexts, as is often the case in situational and functional-notional materials. We also make the distinction between learning form and meaning for active competence and context for passive competence or sensitivity, which reflects neatly what language teachers seem to have felt intuitively. Though many approaches to language teaching have concentrated on developing the learner's metacompetence (explicit knowledge), whether or not this can lead to the implicit, active knowledge necessary is still a matter for debate and empirical verification.

The framework we have sketched here is intended to be general enough to permit the comparison of the different notions of communicative and other competences, yet specific enough to make the categories clear and provide some hints as to a step the language sciences might take in the direction of integration. Thus, it permits us to systematize what the different competences need to account for. Future work in defining the relations among competences, the implications of active vs. passive competence, and on how to form a single model coordinating all of this will serve to make this direction clearer and at the same time, hopefully take us that much closer.

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* We are indebted to Professors Michel Paradis and Paul L. Garvin for their constant encouragement and kindly advice.

REFERENCES

- Bloomfield, L. Language. New York: Holt, Rinehart and Winston, 1933.
- Campbell, R. and Wales, R. "The Study of Language Acquisition" in: J. Lyons, Ed. New Horizons in Linguistics. Middlesex, England: Penguin Books, 1970.
- Canale, M. and Swain, M. "Theoretical Bases of Communicative Approaches to Second Language Teaching and Testing" Applied Linguistics, 1(1): 1-47. (1980).
- Chomsky, N. Aspects of the Theory of Syntax. Cambridge, Mass: MIT Press, 1965.
- "Rules and Representations" Behavioral and Brain Sciences, 3(1): 1-36. (1980).
- Dale, P. Language Development: Structure and Function. New York: Holt, Rinehart and Winston, 1972.
- Davis, P.W. Modern Theories of Language. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1973.
- Fillmore, C. "A grammarian looks to Sociolinguistics" in: R. Shuy, Ed. Sociolinguistics: Current trends and Prospects [GURT, no. 25]. Washington, D.C.: Georgetown U. Press, 1972.

- Garvin, P.L. "Karl Bühler's contribution to the Theory of Language" Journal of General Psychology, 75: 212-5. (1966).
- , "An Empiricist Epistemology for Linguistics" in: M. Paradis, Ed. The Fourth LACUS Forum, 1977. Columbia, SC: Hornbeam Press, 1978.
- Gopnik, M. "What the Theorist Saw" in: J. Wirth, Ed. Testing Linguistic Hypotheses. Washington, D.C.: Hemisphere Publishing Co., 1974.
- Hall, E.T. The Silent Language. New York: Doubleday & Co., 1959.
- Hymes, D. "On Communicative Competence" in: J. Pride and J. Holmes, Eds. Sociolinguistics. Middlesex: Penguin Books, 1972.
- Jakobovits, L. Foreign Language Learning. Rowley, Mass: Newbury House, 1970.
- Katz, J.J. Semantics. New York: Harper & Row, 1972
- Mathiot, M. "A meaning-based theory of face-to-face interaction" in: M. Mathiot & J. Penfield, Eds. How to cope with Mainstream Culture: A cultural approach to bilingual education. Forthcoming.
- Morris, C. "Foundation of the Theory of Signs" in: International Encyclopedia of Unified Science, Vol. 1, nos. 1-5. O. Neurath, R. Carnap and C. Morris, Eds. Chicago: University of Chicago Press, 1955.
- Savignon, S. Communicative Competence: an experiment in foreign language teaching. Philadelphia: Center for Curriculum Development, 1972.

THE SUBJACENCY CONDITION AND LANGUAGE ACQUISITION

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Chomsky (1977b) outlines a theory of grammar in which cyclic movement rules are constrained by the Subjacency Condition (SC) of (1).

- (1) A cyclic rule cannot move a phrase from position Y to position X (or conversely) in

... X ... [_{α} ... [_{β} ... Y ...] ...] ... X ..., where

α and β are 'cyclic nodes' (i.e. NP or S)

The SC accounts for the ungrammaticality of sentences like (2).

- (2) * Who [_S did you destroy [_{NP} a book about _?]]

Notice that the wh word in (2) has been extracted from a structure that is dominated by both an NP and an S node - in violation of the SC.

The significance of the SC for linguistic theory goes well beyond the role that it plays in blocking the derivation of sentences like (2). As a putative part of the grammar of the mature English speaker, the SC raises some interesting questions about the acquisition of language. Although the linguistic performance of children and adolescents appears to be consistent with knowledge of the SC in that utterances like (2) are not to my knowledge systematically attested, there is no reason to believe that language learners are exposed to either the instruction or the experience needed to actually learn this principle. This point merits elaboration. Imagine for a moment that the child's language learning ability consisted of general inductive and analogical capacities that were dependent on some sort of input and feedback from the environment. Under these circumstances, we would expect (and actually do find) children's first approximations of the adult grammar to be inaccurate, allowing the derivation of many sentences that never occur in standard English. The utterances of (3) exemplify this phenomenon.

- (3) a. Your books are bigger than my ones.

- b. Where those dogs goed?
- c. I turned off it [the light].
- d. All broken wheel.
- e. It's fell.

Although one might expect the constructions of (3) to disappear as the child gradually notices that no sentences with these precise syntactic properties occur in the speech of adults, the acquisition of the SC could not proceed in this way. While one might think that the absence of utterances like (2) from the primary data could somehow trigger the development of the SC, this possibility is ruled out by the existence of sentences like (4) - (6).

- (4) Who did you read a book about _?
- (5) Who did you see a picture of _?
- (6) Who did you make a statement about _?

The existence of grammatical sentences like (4) - (6) should seriously hinder the induction of the SC and we would expect the language learner to incorrectly produce sentences like (2). Although there is no evidence that overgenerations of this sort actually occur, their hypothetical appearance would do nothing to resolve the learnability problem. Because parents do not systematically monitor the grammaticality of their children's utterances and because the language learner is generally irresponsive to attempts to correct his speech (Braine 1971), it is hard to see how violations of the SC could contribute to the inductive learning of this principle. The apparent unlearnability of the SC as well as its putative universality is taken by Chomsky (1977a:20) as evidence that this principle is part of Universal Grammar (UG) - the innate schematism that determines the class of possible languages.

Although the nativist case would seem to be well supported by evidence that the SC is a necessary part of English grammar but not inducible from the primary linguistic data, a closer examination of the facts reveals a serious difficulty - namely the principle's susceptibility to idiosyncratic variation of lexical origin, as evidenced by the sharp differences in grammaticality that distinguish (2) from (4) - (6).

Discussing this issue, Chomsky (1977:114ff) suggests that the sentences of (4) - (6) only appear to violate the SC and that their constituent structure at the point at which wh movement applies resembles (7) rather than (8).

(7) [_S NP V NP [_{PP} NP] ...

(8) [_S NP V [_{NP} NP [_{PP} NP] ...

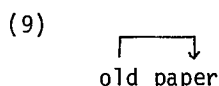
Although (8) is taken to represent the deep structure of the sentence type under discussion (thereby reflecting the fact that choice of the PP is governed by selectional and subcategorizational properties of the postverbal NP rather than the verb), Chomsky suggests that Extraposition from NP optionally applies in the complement structure of certain verbs (e.g. see, but not destroy), creating the structure in (7) to which wh movement can then apply without violating the SC.

Chomsky's proposed analysis of sentences (4) - (6) suffers from a number of flaws, the most serious being that it is inconsistent with any plausible account of language acquisition. Assuming that children are not born with the knowledge that see - but not destroy - governs Extraposition, we are forced to conclude that this range of facts is somehow learnable from the primary linguistic data. Such a conclusion is, however, clearly untenable for the same reasons that the inductivist account of the SC fails. As a marginal syntactic process, Extraposition from NP is almost certainly not manifested in the primary data with enough frequency for the child to induce the lexical restrictions on its occurrence and there is no reason to believe that any resulting overgeneralizations could be 'corrected' by negative feedback from adults.

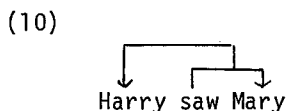
Essentially the same criticism can be levelled against Koster's (1978) suggestion that the use of Extraposition to salvage the SC be abandoned in favour of an analysis in which the SC is removed from the innate core of linguistic knowledge and relegated to the less regular, language-specific periphery of the grammar. While the idiosyncratic and lexically governed character of the SC may well justify its exclusion from UG, such a move does not even begin to account for how this principle is acquired by the language learner. If the primary linguistic data is too impoverished to allow the induction of the lexical variations associated with Extraposition from NP, then how can we expect Koster's version of the SC, replete with the same idiosyncracies and exceptions, to be learned on the basis of induction from experience?

In the remainder of this paper I will attempt to show that the learnability problem associated with different versions of the SC is an artifact of a transformational analysis and that it can be resolved through recourse to a level of linguistic representation which has hitherto been virtually ignored in the literature - namely predication structure.

The communicative function of language presupposes the use of some words to provide information about the referents of other words. Following the practice implicit in the work of Jespersen (1965) and Guillaume (1973), I will assume that when the lexical content of one word is attributed to the referent of another, the first word can be said to predicate the second. The predication relationship underlying a phrase like old paper, in which it is said of the paper that it is old, can be represented in diagram form as follows:



Following O'Grady (1980), I will assume that the predication structure underlying a typical SVO sentence can be represented as follows:



The predication relations in (10) indicate that it is said of Mary that she was seen and of Harry that he saw Mary.

Although much more could be said about the principles governing the assignment of predication structure, the two conventions implicit in examples (9) and (10) will suffice for our purposes. They are:

- (11) a. Adjectival expressions predicate their head noun.
 b. A verb predicates its direct object and the resulting unit predicates the subject.

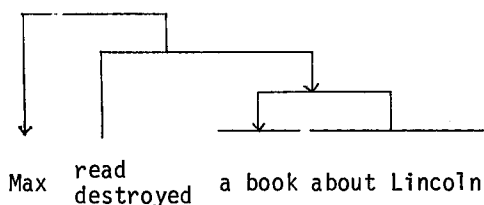
Let us now turn our attention to the sentence types upon which our earlier discussion of the SC was based and attempt to determine how the principles of (11) can be used to determine the relevant predication structures. Consider:

(12) Max read a book about Lincoln.

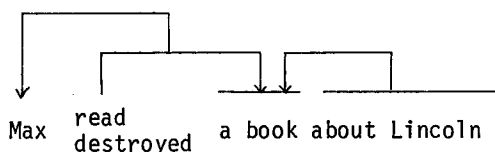
(13) Max destroyed a book about Lincoln.

Depending on whether or not we take the adjectival phrase about Lincoln to be part of the unit corresponding to the direct object at the point at which (11b) applies, we will obtain one of two predication structures. (Here and elsewhere I will use a horizontal line to indicate that the internal structure of a phrase is irrelevant to the point under discussion).

(14)



(15)



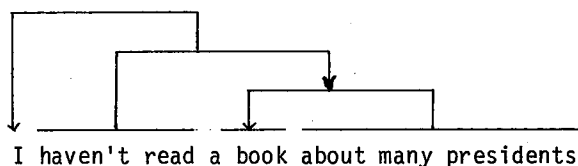
Let us refer to (14), in which all the words in the VP form a single constituent, as a unitary predication structure and to (15), in which there is a 'break' in the configuration, as a composite predication structure. Although both predication structures appear to be consistent with the meaning of sentences (12) and (13) in that both indicate that Max has read or destroyed a book and that the book is about Lincoln, the two make different predictions about the acceptability of negative-quantifier fusion. On the assumption that not and many can combine to yield the meaning 'few' (as in I didn't see many books) only when one is in a unit predicated by the other, we can use negative-quantifier fusion as a test for the existence of a unitary predication structure. In this regard, consider sentences (16) and (17).

(16) I haven't read a book about many presidents.

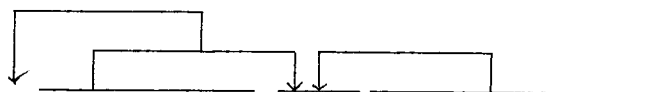
(17) I haven't destroyed a book about many presidents.

Notice that whereas (16) allows the interpretation 'I have read books about only a few presidents', a comparable reading is not possible for (17). This intriguing contrast suggests that the complement structure of destroy, but not that of read, contains a 'break' between the NP and the PP.

(18)



(19)



I haven't destroyed a book about many presidents.

While it is interesting to note that different verbs seem to require different predication configurations in their complements, it is even more intriguing to discover that the admissibility of negative-quantifier fusion (and therefore the occurrence of a break in predication structure) is correlated with the possibility of extraction from the PP. Compare, for example, sentences (20)-(22) in which both not-many fusion and wh movement are fully acceptable with sentences (23)-(25) in which negative-quantifier fusion is difficult and extraction from the PP yields structures whose status varies from ungrammatical to slightly less than acceptable.¹

- (20) a. We didn't take a picture of many women.
 b. Which women did you take a picture of _?
- (21) a. He didn't make a statement on many issues.
 b. Which issues did he make a statement on _?
- (22) a. He didn't describe the contents of many books.
 b. Which books did he describe the contents of _?
- (23) a. He didn't buy a feature article on many athletes.
 b. ?*Which athletes did he buy a feature article on _?
- (24) a. He didn't want a painting of many presidents.
 b. ??Which presidents did he want a painting of _?
- (25) a. He didn't read a book by many authors.
 b. ??Which authors did he read a book by _?

The apparent prohibition against extraction from a unit separated from the rest of the sentence by a break in predication structure (as evidenced by the inadmissibility of not-many fusion) supports the formulation of the following principle:

- (26) The Predication Constraint on Movement (PCM). No element may be extracted from a unit which is separated from the sentence nucleus (the basic SVO sequence) by a break in predication structure.

On the assumption that we are right in supposing that a break in predication structure blocks wh movement, our next task must be to determine precisely how the child learns to compute the appropriate predication structures in the range of cases under discussion.

The key to resolving this question seems to lie in an understanding of the relationship between predication structure and semantic relations. As the level of linguistic representation concerned with the combinatorial relationships among the meanings of words, predication structure can be expected to exhibit an organization which reflects the network of semantic relations holding among the words and phrases of a sentence. We might thus expect that the VPs exhibiting a unitary predication structure would somehow form a more cohesive semantic unit than comparable composite constructions. This prediction seems to be borne out in that sentences in which the VP is associated with a unitary predication structure do seem to exhibit a rather unique network of semantic relations. In particular, it seems that in unitary predication structures the verb denotes an action involving the perception or production of some type of 'representation' of the referent of the NP governed by the preposition. In addition to sentences (4) - (6) and (20) - (22), we have examples like:

- (27) a. He didn't do a painting of many presidents.
- b. Which presidents did he do a painting of _?
- (28) a. He hasn't made a film on many ordinary people.
- b. Who has he made a film on _?
- (29) a. He hasn't written an article on many difficult subjects.
- b. What has he written an article on _?
- (30) a. He hasn't heard a story about many judges.
- b. Which judges has he heard a story about _?

Other expressions exhibiting this pattern include write a book on, read an article about, examine a portrait of, read a review of, see a portrait of and read a description of. Notice that in all these cases the negative-quantifier test suggests the presence of a unitary predication structure and that extraction from the PP is, as expected, permissible.² Even more significant, however, is the fact that the VP complex seems to form a cohesive unit in that

all three phrasal categories are semantically related to each other. Notice in particular that the referent of the postverbal NP provides a visual, graphic or auditory representation of the referent of the nominal governed by the preposition and that the verb denotes an activity involving the production or perception of this representation. The result of this somewhat unusual network of semantic relations is that the referent of the nominal in the PP functions as a 'pseudo-patient' of sorts: to make a statement about someone is to speak of him; to read a book about someone is to read about him; to take a picture of someone is to photograph him, to produce a film or write a book on someone is to depict him in some way; and so on. It is this semantic relation of pseudo-patient between the verb and the PP that apparently motivates the unitary predication structure which seems to be associated with sentences of this type. A unitary predication structure is not found in sentences in which the nominal in the PP does not bear the relation of pseudo-patient to the verb. In the following utterances, for example, the verb does not denote an activity involving the perception or production of some representation of the referent of the PP and neither wh movement nor not-many fusion is fully acceptable.

- (31) a. John didn't edit a book on many presidents.
b. ??Who did John edit a book on _?
- (32) a. John didn't borrow an article on many languages.
b. ?What did John borrow an article on _?
- (33) a. Harry hasn't sold a feature article on many subjects.
b. ?What has Harry sold a feature article on _?
- (34) a. He doesn't remember a film on many linguists.
b. ?*Which linguists does he remember a film on _?

Other expressions exhibiting this pattern include steal a statement about, choose a picture of, request an article on, criticize a book about, understand a review of, imagine a film about, and exhibit a photograph of.

Sentences in which the nominal in the PP does not function as pseudo-patient because it does not bear the necessary relationship to the referent of the preceding NP also seem to exhibit a break in predication structure in that neither not-many fusion nor wh movement is possible.

- (35) a. I didn't read a magazine with many torn pages.
 b. *Which torn pages did you read a magazine with _?
- (36) a. We haven't read a book by many authors.
 b. ?*Which authors have you read a book by _?
- (37) a. We haven't seen a painting by many artists.
 b. ??Who did you see a painting by _?
- (38) a. I didn't read a book from many shelves.
 b. *Which shelves did you read a book from _?

It would seem, then, that the conditions governing extraction from a PP involve knowledge of the appropriate predication structure and knowledge of the PCM.³ Although it is hard to imagine how these types of knowledge could be induced from experience when the SC and Extraposition could not, the model of grammar outlined here differs from conventional transformational grammar in that it does not require the formulation of innate rules and representations to overcome the inadequacies of the primary linguistic data. Instead, the principles needed to determine the permissibility of extraction can be derived from simpler and more basic forms of linguistic knowledge. Consider, for example, the predication structures that are required to distinguish between the two sentence types examined here. As pointed out in our earlier discussion, the properties of predication structure that determine the admissibility of extraction are simply a manifestation of the general principle that the organization of predication structure reflects the combinatorial relationships among the meanings of the words in a sentence. Thus, we find that a unitary predication structure (which allows extraction) occurs when the units of the VP form a cohesive semantic unit with the verb denoting an action involving production or perception, the post-verbal NP denoting the patient, and the referent of the nominal in the PP functioning as pseudo-patient by virtue of the fact that the preceding NP refers to a representation of it. In contrast, the composite predication structure associated with sentence types that do not allow extraction from a PP is characterized by the absence of any semantic relation between the V + NP sequence and the nominal governed by the preposition.

The properties of predication structure needed to differentiate the sentence types discussed here seem, then, to follow from a general principle governing the relationship between predication and meaning. Because this principle manifests itself in even the most basic sentences of English, it should be learnable. A plausible scenario for its acquisition might proceed as follows. In the course of his experience with language, the child

encounters sentences like Dogs chase cats in contexts where the intended meaning is perfectly clear.⁴ Assuming prior knowledge of the relevant vocabulary, the child can determine the relationship between form and meaning in sentences like this one by simply generating the set of combinatorial (predicational) relationships that match his perception of the meaning of the utterance (namely that it is said of cats that they are chased and of dogs that they chase cats). The same elementary principle that the child can infer from his experience with simple sentences and phrases - namely that the combinatorial relations comprising predicational structure reflect the network of semantic relations associated with a sentence - will allow him to assign the appropriate predicational configuration to the constructions that have been discussed here.

The second component in the approach to extraction being developed here is, of course, the PCM. Like the properties of the predicational structures to which it applies, the PCM seems to be a second order construct whose existence can be traced to more elementary types of knowledge, this time relating to the information structure of the sentence. On the assumption that a fronted element serves as topic or theme (i.e. is 'what the rest of the sentence is about,' - in the sense of Kuno (1975:277)) and that this generalization can be induced from one's experience with utterances whose intended meaning is apparent from the context, the source of the PCM becomes clear. Because the PP in a composite structure is predicationally related only to the preceding NP and not to the rest of the sentence, it is obviously ineligible to serve as topic, where the topic is what the rest of the sentence is about. The PCM, then, simply follows from the nature of the category of topic and the configurational properties of a composite predicational structure.

The approach to language acquisition that seems to follow from the predicational analysis of extraction is essentially constructivist in nature, implying that at least some forms of linguistic knowledge are neither innate nor induced from experience but rather are literally 'constructed' out of more elementary forms of knowledge. While this perspective could well have far reaching implications for our understanding of the human language faculty, it has proved particularly valuable within the scope of the present discussion in resolving a dilemma involving the learnability of one fragment of English grammar. Under the orthodox transformational account of language acquisition, principles that are not inducible from the primary linguistic data are taken to correspond to biologically necessary properties of human language and are attributed to UG (see, for example, Chomsky's (1980) argument from the poverty of stimulus). Although not inherently unreasonable, this position is ultimately untenable because at least one linguistic subsystem (consisting of the SC and Extraposition) would be simply inaccessible to the human child since it is too far removed from the primary linguistic data to be learnable and too

susceptible to lexical variation to be part of UG. The analysis developed here circumvents this difficulty by developing a principle (the PCM) and positing a set of configurational properties (relating to the contrast between unitary and composite predication structure) that not only meet obvious conditions of empirical adequacy but also are accessible to the language learner. Although not actually inducible from the primary linguistic data, the PCM and the contrast between unitary and composite predication structure can be derived from more basic types of knowledge having to do with the information structure of the sentence as well as the relationship between semantics and predication structure.

There are, then, two major conclusions that can be drawn from our discussion of the SC. First, it is evident that the conventional view that linguistic principles that are not inducible from experience are innate must be abandoned as untenable. The existence of linguistic subsystems that are neither innate nor learned forces us to accept a constructivist view of language acquisition according to which at least some linguistic principles are derived from simpler forms of (learnable) knowledge. Second, it is important to realize that the learnability problem associated with the SC is, in large measure, an artifact of the assumption that constituency is best represented by abstract formal relations of the sort depicted in syntactic trees rather than by predication configurations. Because there is no straightforward relationship between semantic relations and syntactic structure and because there is no equivalent of the unitary-composite contrast for tree structures, the constructivist approach outlined here cannot be used to resolve the learnability problem that the SC creates for transformational grammar. Future progress in the study of the human language faculty may well be dependent upon our willingness to abandon traditional notions of the nature of constituent structure as well as the conventional nativist view of language acquisition.

NOTES

1. The dialectal variations and uncertain judgments associated with many of these constructions are an expected consequence of the fact that even utterances formed with the help of movement over a break in predication structure remain highly interpretable. The grammaticality judgments indicated in the text are based on a survey of 41 native speakers of English.
2. The not-many test will give reliable results only when the first postverbal NP is singular. In sentences like He didn't buy books on many presidents, where a negated verb predicates a plural direct object, it is easy to take books on many presidents to mean 'many books on presidents'. As a result of this semantic (vs. syntactic) transposition of the quantifier, many falls within the logical scope of the

negative even though it is not in a unit predicated by not. Such a phenomenon does not, of course, signal the presence of a unitary predication structure and wh movement is, as expected, inadmissible.

?Which presidents did he buy books on _?

3. Although limitations on time and space preclude discussion of other (less frequent) sentence types exhibiting unitary predication structures, these other constructions do seem to meet conditions on semantic cohesiveness comparable to those outlined here. For a broader examination of wh movement and predication structure, see Acock (1981).
4. Following Macnamara (1972), I assume that new structures can be learned only when there is some independent means to determine the meaning they represent.

REFERENCES

- Acock, M. 1981. *A predication approach to topicalization and clefting*. M.A. thesis. Department of Linguistics, the University of Calgary.
- Braine, M. 1971. On two types of models of the internalization of grammars, in D.I. Slobin, ed., *The ontogenesis of grammar: A theoretical symposium*, New York: Academic Press.
- Chomsky, N. 1977b. On *wh* movement, in P. Culicover, T. Wasow and A. Akmajian, eds., *Formal syntax*. New York: Academic Press.
- Chomsky, N. 1980. *Rules and representations*. New York: Columbia University.
- Guillaume, G. 1973. *Principes de linguistique théorique*. Quebec: Laval University.
- Jespersen, O. 1965. *The philosophy of grammar*. New York: Norton.
- Koster, J. 1978. Conditions, empty nodes and markedness. *Linguistic Inquiry* 9, 551-94.
- Kuno, S. 1975. Three perspectives in the functional approach to syntax. *Papers from the parasession on functionalism*. Chicago: Chicago Linguistics Society.
- O'Grady, W. 1980. Foundations of a theory of case. *Studies in Language* 4, 229-48.

VARIATION IN THE SEMANTIC INTERPRETATION OF ISOLATED WORDS¹

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The meaning components of lexical fields can be discovered in a variety of ways; through *a priori* componential analyses, consideration of collocations, or psycholinguistic experiments. Most of these approaches are based on the assumption that language users have a static mental dictionary, with each individual having the same representation for the same lexical items. Such an assumption denies that each of us has unique experiences which might lead us to find different aspects of lexical meaning salient in different contexts.

The results from the two experiments presented in this paper indicate that subjective variation in the reading of lexical meaning can be found within an experimental setting. Experiment I shows that the underlying meaning components of kinship terms can have differential salience for different people. Experiment II shows that the ambiguous interpretation of the rating scale used can lead to a variation in reaction to verbs of possession.

Experiment I

The meaning components of fifteen English kinship terms were discovered by asking subjects to rate the similarity of meaning of each pair of words. Eighty-seven introductory psychology students participated in this study. The kinship terms were presented in an upper triangular matrix, shown in Figure 1, so that each word could be compared to all the others. Every subject received a different random order of terms. Subjects were asked to rate the pairs of kinship terms on a 1-9 similarity of meaning scale where 1 indicated "most similar" and 9 "least similar" in meaning.

A set of temperature terms will illustrate the technique. Given the list *freezing, cold, tepid, warm, hot, and boiling*, A 9 might be assigned to *freezing-boiling* as the most dissimilar pair, and a 1 to *freezing-cold* as the most similar pair. A pair such as *tepid-warm* might receive a 3 or 4 rating as might *cold-tepid*, depending upon how similar the words in

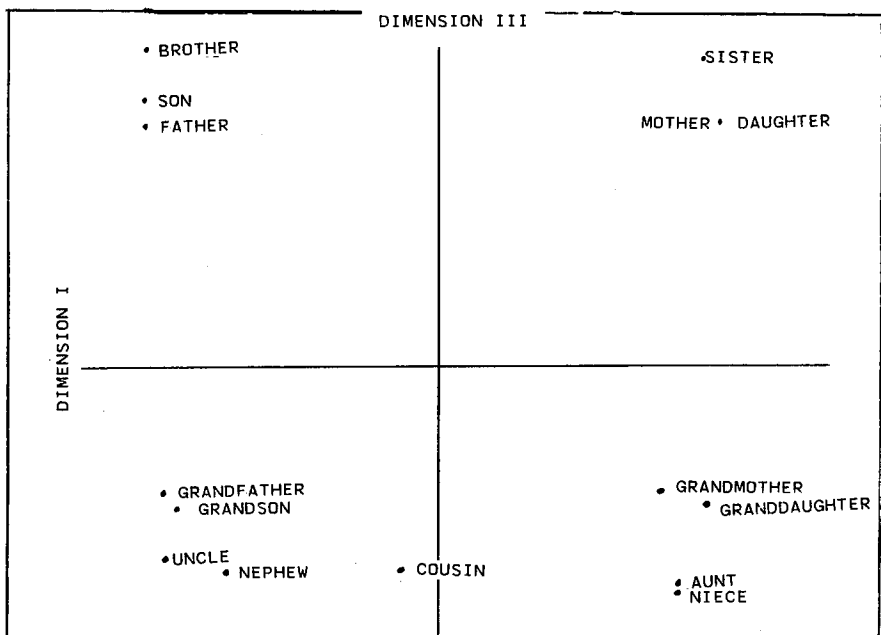


Figure 3: Kinship terms Dimension I, male-female by Dimension III, nuclear-extended family

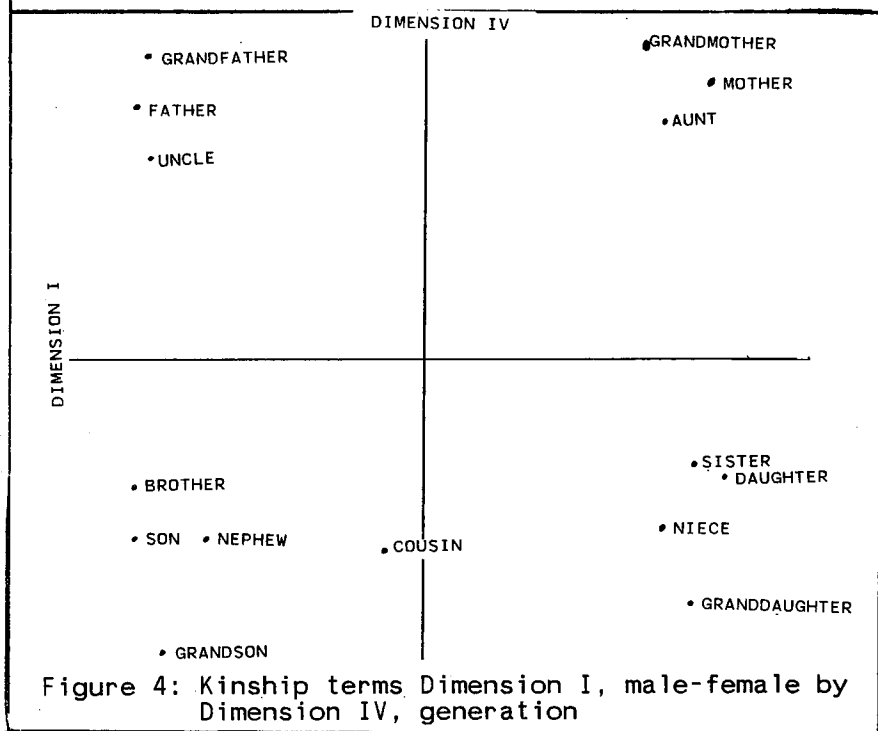


Figure 4: Kinship terms Dimension I, male-female by Dimension IV, generation

each pair are considered to be.

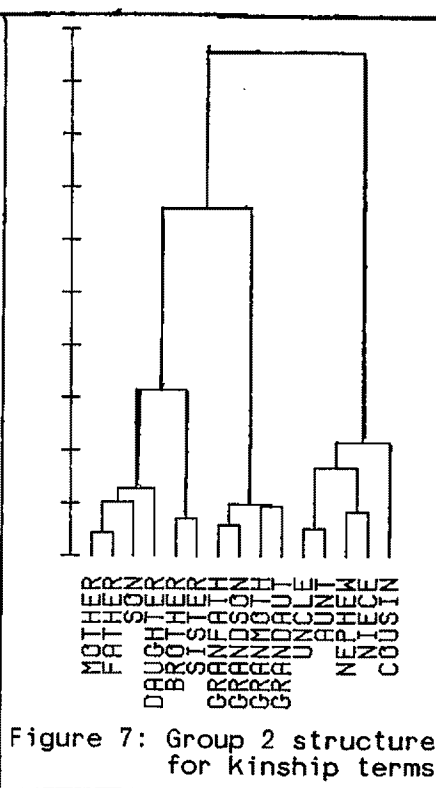
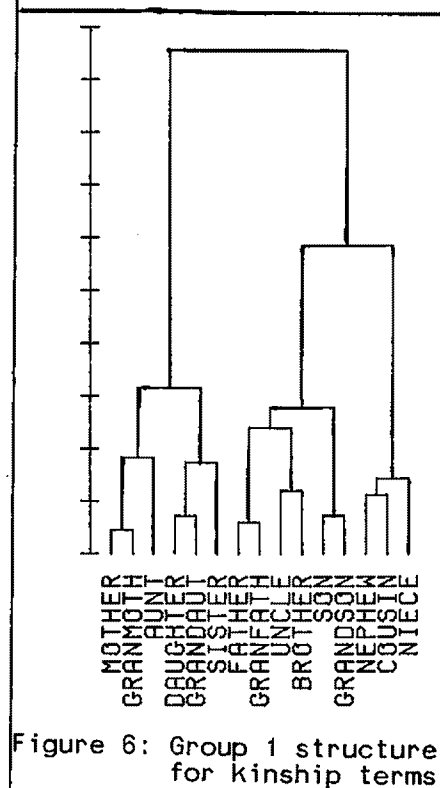
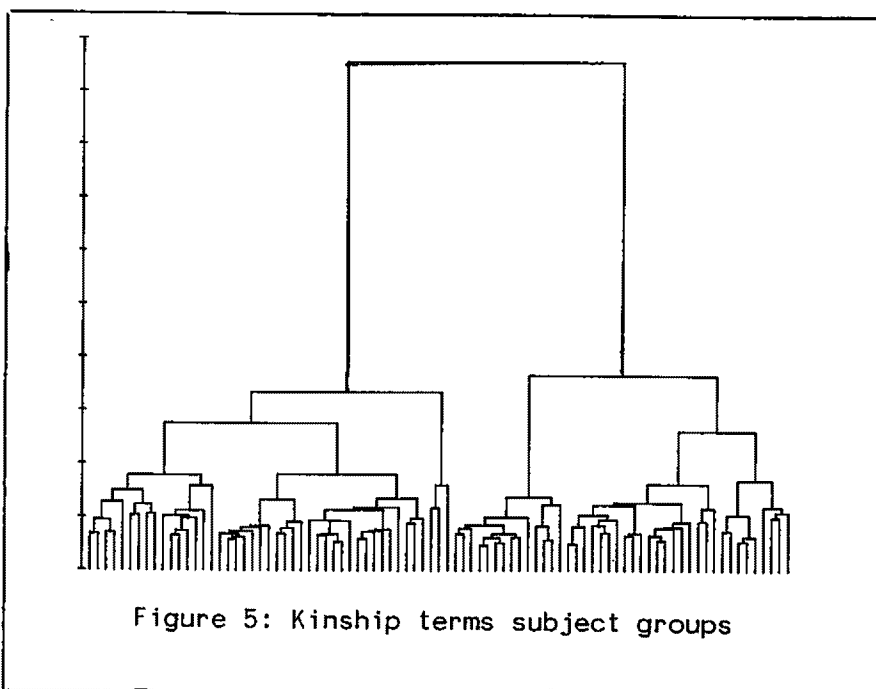
Averaging the similarity ratings across subjects provides a measure of the distance among the terms rated. Words with a small distance between them are similar in meaning and large distances indicate substantial differences in meaning. The distances can be analyzed using multi-dimensional scaling methods (Romney, Shepard, & Nerlove, 1972), which provide a technique for finding the underlying meaning components of the distance data. An analysis of distance ratings for the set of temperature words will reveal one dimension, *hot-cold*.

The multi-dimensional scaling of similarity ratings for the kinship terms showed four meaning dimensions (Figures 2-4); Dimension I, male-female; Dimension II, collateral-direct (lineality); Dimension III, nuclear-extended family; and Dimension IV, generation, young to old. These results obtained from subject judgements about similarity of meaning support componential analyses proposed by Wallace and Atkins (1960) and Romney and D'Andrade (1964).

Even though all four dimensions may be present in each subject's psychological organization of kinship terms, it is possible that for some subjects some semantic components are more salient than others. The data can be analyzed in another way, one capable of detecting subject groups in the case where the participants do not respond homogeneously. The hierarchical clustering method (Johnson, 1967; Wishart, 1978) initially treats each subject as a separate cluster, and then gradually builds a tree by grouping together people who respond similarly. The clusters become progressively larger until finally there is only one cluster including everybody. If the subjects had responded exactly alike they would form a single cluster devoid of internal tree structure. If they responded randomly, everyone giving a unique pattern of responses, the cluster links would build up gradually and the tree would resemble a rectangle.

Figure 5, representing a hierarchical clustering of subjects, shows a clearly structured tree. The highest link is at the top of the graph and the next lower links are two-thirds of the way down. This figure indicates that two different patterns of subject responses occurred in the semantic similarity ratings of kinship terms.

The responses from each group can be analyzed separately, also using hierarchical clustering. The



multi-dimensional scaling analysis masked the group differences but the hierarchical clustering trees show the psychological organization of kinship terms common for the members of each group. Figure 6 shows that Group 1 found differences in gender an important meaning component of kinship terms and also to some degree, lineality. Group 2 subjects also found lineality important, but, in addition, they focused on the differences between nuclear and extended family members (Figure 7). Unfortunately, no personal information about the subjects is available, so one can only speculate as to why different response patterns occurred. Perhaps subjects in Group 2 are more closely attached to their families than Group 1, and therefore, find the nuclear family an important factor in their lives. Group 1 subjects, on the other hand, interpreted the kinship words in terms of referential characteristics. They focused on obvious, and to some extent visible, differences among the people who are referents of kinship terms.

The multi-dimensional scaling analysis indicates that all subjects saw all the meaning components, although some found certain components more important than others. The analysis provides weights of the salience of each dimension for each subject. The ranking of the dimensions was pooled for each subject group and the mean ranks support the interpretation given to the hierarchical clustering of terms for the two groups.

TABLE 1: Rank order of importance of kinship dimensions

	DIMENSIONS			
	GENDER	LINEALITY	NUCLEAR FAMILY	GENERATION
GROUP 1	1.45	2.42	3.17	2.95
GROUP 2	2.72	1.56	2.08	3.64

Table 1 shows that Group 1 ranks gender differences as most salient and generation as least salient. Group 2 subjects found the nuclear-extended family dimension most important and they hardly considered generation at all in their semantic similarity ratings. χ^2 was calculated to determine whether group membership was independent of rank on a given dimension. This statistic was significant ($\chi^2_{60} = 49.138, p < .001$), indicating that group membership is indeed dependent on rank ordering of the dimensions.²

Experiment II

A semantic similarity rating study had previously been conducted to discover the underlying dimensions of the verbs of having and giving, also known as have verbs (Bendix, 1966). The analysis of those results revealed three dimensions; acquiring vs. losing (*buy, gain, find, vs. lose, sell*), possessing vs. lacking (*have, own, offer, vs. beg, need, borrow*), and receiving vs. giving (*receive, accept, vs. give, offer*). These dimensions were renamed inward-outward, positive-negative, and active-passive respectively, to correspond with dimensions found in another study not discussed here (Magnera, in prep.). The following section will only present results from the positive-negative dimension.

An experiment was designed to test whether or not the interpretation of the multi-dimensional scaling analysis for *have* verbs was valid.³ The stimuli were presented in an upper triangular matrix like the one in Figure 1, but instead of rating the similarity of meaning of each pair of words, the subjects were asked to decide which member of a pair was the more positive. If the item at the top of the matrix dominated the row word, subjects responded with a 1 in the appropriate box; otherwise they marked the pair 0. Twenty-nine introductory psychology students completed this task.

A hierarchical clustering analysis of the pooled responses from the positive scale indicated four separate subject groups (Figure 8). Two of the groups were responding randomly, (subjects 16 through 22 on the right-hand side of the tree), and they were dropped from further analyses. Data from each of the two remaining groups were analyzed separately and the results are presented in Figures 9 and 10.

The major difference between the two groups was in their responses for the items *take, offer, and give*. Group 1 has interpreted positiveness in an evaluative good-bad sense while Group 2 interpreted it in terms of possession. In particular, Group 1 considered *offer* and *give* as very positive (These are virtuous gestures in our society), while Group 2 considered these two terms as negative (when you give something away you no longer have it).

The subjects in the dominance ratings task perceived different aspects of *have* verbs depending upon their interpretation of the positiveness scale. The response variation discovered in this experiment illustrates the importance of context in the

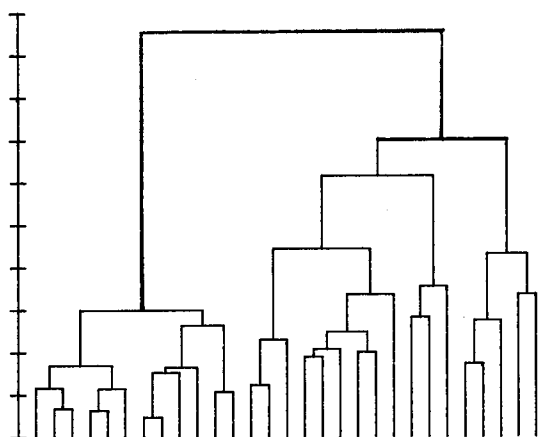


Figure 8: Have verbs subject groups

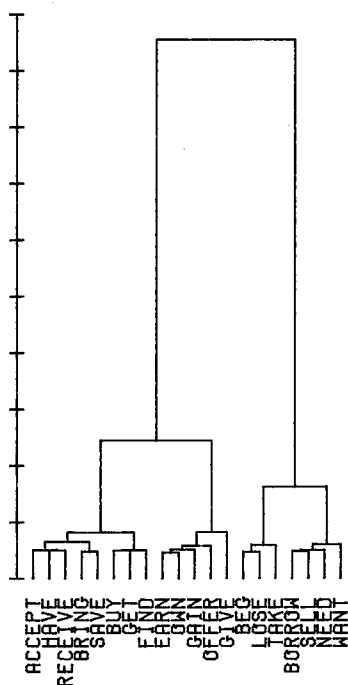


Figure 9: Group 1 structure
for have verbs

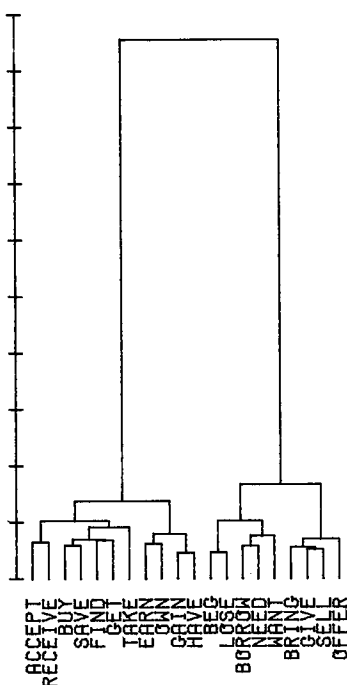


Figure 10: Group 2 structure for have verbs

interpretation of meaning. The scale for rating was undefined and no contextual clues were provided to aid in the interpretation of positiveness. This ambiguity was resolved in one way by Group 1 and in another by Group 2. Another scale, plusness, was also used in this study. Plusness was defined as "does verb imply possession of something or lack of possession?" The plusness scale was interpreted unambiguously and there were no subject groups, (i.e., everyone responded in the same way). As might be expected, Group 2 responses correlated .95 with responses on the plusness scale while Group 1 only correlated .75.

Discussion

The usual approach to investigating lexical meaning is to consider meaning as a property of words, but meaning is dynamic not static. Words are invested with meaning by language users during the production and comprehension of utterances. Restricting the meaning of a word to a limited set of interpretations is impossible since every context brings out a different nuance of meaning. Lexicographers, who make lexical meaning their life's work, do not attempt to find the meanings of words apart from contexts. Instead, they look at how a word is used in different situations and endeavor to account for all possible interpretations of that word. E. Murray describes the process of compiling the *OED* in *Caught in the Web of Words*. Readers were asked to search English language texts and note any unusual uses of certain words. The editor of the *OED*, the author's grandfather, was documenting the historical development of English words; evidence for lexical change could only be obtained by observing the uses of words in literary contexts.

Naturally, not all possible meanings of a word will have equal salience for all people. For any given language user a word can have conventional and idiosyncratic meanings. Conventional meaning is that interpretation(s) most commonly used in a linguistic community. In the experimental contexts, discussed above, the lexical stimuli are presented in isolation; the only contextual constraints are provided by the lexical set used as stimuli and the experimental situation itself. Subjects respond consistently in an experiment because they rely on what they believe to be the conventional meaning rather than their idiosyncratic meanings. Despite comments to the contrary, participants in experiments want to be "correct" and try to give the same answer as everyone else.

The experimental task can influence how subjects interpret the meaning of a word. In the kinship terms study the stimuli were interpreted in terms of the referential characteristics associated with kinship roles. The lexical items were contrasted with one another and the most conventional approach to participating in this experiment is to note differences of sex, age, and lineality. The semantic differential task, another method for discovering lexical meaning leads to a metaphorical interpretation of lexical items. In the semantic differential task subjects are asked to rate isolated lexical items such as *mother* on several bipolar scales such as, *good-bad*, *warm-cold*, and *round-angular*. Since the scales rarely describe referential features of the concepts rated, it is difficult to perform the task if the stimuli are not interpreted in an abstract, metaphorical manner (Osgood, 1976). It is unlikely, for example, that *mother* would be rated on the *warm-cold* scale with reference to her body temperature.

Subjects interpret lexical meanings in terms of their own experiences. In most componential analyses of kinship terms the analysis is formulated around a hypothetical ego, but for subjects in Experiment I ego = me. This can lead to a discrepancy between an anthropologist's view of the kinship system and the naive language user's conception. In their componential analysis of English kinship terms Wallace and Atkins (1960) predicted that *son/daughter* should be a generation below *brother/sister*. The latter pair of relationships are the same generation as the hypothetical ego while *son/daughter* are thought to refer to ego's children and are therefore a generation younger.

Figure 4 shows that subjects in Experiment I rated *son/daughter* as the same generation as *brother/sister*, *nephew/niece* and *cousin*, contrary to Wallace and Atkins' prediction. It should be noted that the subjects were quite young (17-28 years); few would be likely to have experienced parental roles and none would have been grandparents. Therefore, most subjects would think of themselves as sons or daughters and brothers or sisters simultaneously. This has the effect of placing *son/daughter* at the same generation as ego rather than one generation below. Conducting the same experiment at a senior citizens home might reveal a slightly different perception of the generation dimension than for the younger subjects.

In the have verbs experiment meaning was also interpreted from an egocentric point of view. One

group interpreted the stimuli as "good or bad for me to do", while the other group rated possession from the perspective of "will I have something or not after this action?"

Meaning is a part of human cognition. It is impossible for anyone to interpret the meaning of a word purely objectively, since we are intimately involved with meaning everytime we use language. Even so, we can distinguish conventionally accepted meanings from idiosyncratic ones. (If someone does not do this he may be diagnosed as schizophrenic.) Conventional meaning is an important factor in the functioning of society; it allows us to be reasonably certain that we can communicate with others. In spite of an awareness of conventional meanings it is unrealistic to expect everyone to respond to word meanings in exactly the same way. Psychological investigations of meaning, in particular, must look for subjective variation. The analytic techniques for accomplishing this are available and should not be underestimated or ignored.

Notes

1. The research presented in this paper has been generously supported by the Izaak Walton Killam Foundation.
2. The results of the kinship study were replicated using different subjects and an entirely different data gathering method. Fifty-eight subjects were asked to sort cards with the kinship words printed on them into piles so that each pile had some meaning element in common. A hierarchical clustering of the subjects revealed four subject groups, one corresponding to each of the four dimensions from the similarity ratings experiment. This confirms that each of these dimensions is salient for different groups in the subject population.
3. Results from the positive scale did not strongly predict the semantic similarity ratings for have verbs. Positive Group 1 responses had a rank order correlation of .41 with subject responses on the possessing-lacking dimension, and the Group 2 rank order correlation was .43. Renaming the dimensions was probably not valid in the have verbs study, even though subjects could apply the scales to the stimuli with interesting results.

References

- Bendix, E. *Componential analysis of general vocabulary: the semantic structure of a set of verbs in English, Hindi, and Japanese*.
Bloomington: Indiana University Press, 1966.
- Johnson, S. C. Hierarchical clustering schemes.
Psychometrika, 1967, 32, 241-254.
- Magnera G. *Subjective variation in organizing the lexicon* (Doctoral dissertation, University of Alberta, in preparation).
- Murray, E. *Caught in the web of words*. New Haven: Yale University Press, 1977.
- Osgood, C. *Focus on meaning: explorations in semantic space*. The Hague: Mouton, 1976.
- Romney, K. & R. D. D'Andrade. Cognitive aspects of English kin terms. In A. K. Romney & R. G. D'Andrade (Eds.), *Transcultural studies in cognition: American Anthropologist special publications*, 1964, 66, 146-170
- Romney, K., R. Shepard, & S. B. Nerlove (Eds.). *Multidimensional scaling* (Vol. 2). New York: Seminar Press, 1972.
- Wallace, A. & J. Atkins. The meaning of kinship terms.
American Anthropologist, 1960, 62, 58-80.
- Wishart, D. *Clustan: user manual* (3rd ed.). Program Library Unit, Edinburg University, 1978.

"this + the fact that he is early + Paul's stupidity strikes Marie + the imagination."

This is sometimes called a figure of verb: the sentiment triggered by its subject is felt by its object. This subject is non-restricted: it may be a complement clause (Que P), a human or non-human noun and non-active. It is a psychological verb which requires that its object be either human or non-concrete. Frapper² can be transformed into an adjectival phrase, whereas frapper¹ cannot, as shown by:

- (4) Que Pierre soit à l'heure est frappant (pour Marie)
 "that Pierre is on time is striking (for Marie)"
 *la pluie est frappante
 "the rain is striking."

The third interpretation of frapper, or frapper³, illustrated by (5), is also a concrete verb:

- (5) le régisseur frappe (les trois coups) que la pièce va commencer
 "the stage manager strikes (the three blows) that the play is about to begin."

This may be judged marginally acceptable by some speakers and falls into the same class as verbs like sonner (to ring) and crépiter (to crackle) in the following sentences:

- (6) la cloche sonne que le match a commencé
 "the bell rings that the match has begun"
 le télescripteur crépite l'armistice + que la guerre est finie
 "the telex crackles the armistice + that the war is over."

The above sentences can be paraphrased as N annonce + communique N en V-ant:

- (7) le régisseur annonce que la pièce va commencer en frappant les trois coups
 "the stage manager announces that the play is starting by striking three blows."

In contrast to other verbs of noise like exploser and éclater, frapper³ must have a human and active subject and cannot take a dative:

- (8) *la machine à écrire frappe à Marie que tout est fini
 "the typewriter strikes to Marie that it's all over"
 *que les cloches sonnent frappent à Marie que P
 "that the bells are ringing strikes to Marie that S."

Another distributional property which distinguishes the

three verbs frapper is the presence or absence of a complement clause as well as its position with respect to the verb. All verbs which take a Que P and a subject or an object +human form a homogeneous semantic class (Gross 1975, table 4). Whatever is contained in the clause has a psychological effect on the subject or the object. This semantic property, however, is not linked to the order of constituents since we find constructions as varied as:

- (9) Paul jure que Marie a raison
 "Paul swears that Marie is right"
 Que Paul joue du violon énerve Marie
 "that Paul plays the violin enervates Marie"
 Marie se plaint de ce que Paul joue du violon
 "Marie complains that Paul is playing the violin."

The properties of the three verbs frapper are summarized in Table 1:

Table 1

hum	-hum	Que P	NR		hum	-hum	Que P
+	+	-	-	frapper ¹	+	+	-
+	+	+	+	frapper ²	+	-	-
+	-	-	-	frapper ³	-	+	+

Since these environments are so different, they cannot be predicted by the psychological property alone. In any case, this is too vague to be of any value.

I will show now, however, that by combining some semantic categories with distributional properties, it is possible to understand how semantic changes occur in a particular case. There is in French a very productive class of verbs which is formed from brand names of machines used for the reproduction of information. They are -er verbs like stenciler, ronéoter, miméographe, xéroser and the like. Their distributional properties, the constraints on the nature of their subjects and their relationships with the verb follow a common and definite pattern. I will also show that this pattern is found in other verbs as well in the history of the language.¹

All verbs of saying have in common some semantic and syntactic properties. I will consider first the semantic properties. These involve the notion of activity, the human/non-human distinction and the notion of directionality.

The subjects of these verbs may always be human, although they do not have to be. They must, however, always be active.

(10) Pierre déshonore Marie
"Pierre disgraces Marie"

(11) Paul attriste Marie
"Paul saddens Marie."

(12) Que Pierre s'affiche avec une rousse { attriste Marie
 { déshonore
 "that Pierre is seen everywhere with a red head saddens +
 disgraces Marie."

(13) Marie { s'attriste de ce que Pierre s'affiche avec une
 *se deshonne
rousse.

The distinction human/non-human has been widely discussed but it must also be pointed out that, just as human nouns are not necessarily active, active subjects can be non-human. Any noun may be used as an active subject:

These verbs also share another semantic property. They con-

vey that the subject is involved in the production of a signal, by means of noise, visual message etc., which is used to exteriorize information from the subject to the intended beneficiary. Again, this semantic property can be easily isolated by comparing sentences like (15) with (16):

- (15) Pierre { enregistre que Marie s'en va
 { avale
 "Pierre records + swallows that Marie is leaving"
- (16) Pierre publie que Marie s'en va
 "Pierre publishes that Marie is leaving."

In (15), the information contained in the complement clause comes from the outside to Pierre, whereas Pierre is the source of the information in the complement clause in (16). According to this analysis, then, activity and directionality are the only two semantic categories which separate verbs of the xéroxer type from those of the enregistrer type.

The syntactic property shared by all of these verbs is that they must take a complement clause in object position which contains the information. The form of this clause, however, is quite peculiar. It does not seem that the source of the Que P can be le fait que P, although most of the time these two complement clauses are semantically equivalent and interchangeable:

- (17) Paul miméographie (*le fait) que le travail cessera à 17h
 "Paul mimeographs (*the fact) that the work will end at 5 o'clock"
- (18) Paul divulgue (le fait) que Marie part
 "Paul divulges (the fact) that Marie is leaving."

This is similar to (19):

- (19) Paul dit (*le fait) que P
 "Paul says (*the fact) that S."

Note also that the presence or absence of a direct object is not conclusive:

- (20) *Paul dit

but

- (21) Paul miméographie.

Therefore, verbs may have syntactic properties which are independent from their use. In addition, these verbs do not passivize well when their direct object is a Que P:

- (22) ??Que le travail cessera a 17h a ete mimeographie par Paul.

I will now turn to some historical evidence which shows that these three properties: activity, directionality and Que P are involved in semantic change in French. The change in the nature of the relationship of the verb with its subject or object can be illustrated by verbs like despiter, diffamer and scandaliser meaning respectively in 16th c. French to despise, to destroy someone's reputation and to shock, as shown in (23), (24) and (25):

- (23) Voila comment nous pourrons despiter toutes les calomnies des hommes (Calvin)
"here is how we will be able to despise all the calomnies of men"
- (24) Ses actions...l'honorent ou le diffament (Montaigne)
"his actions do him honor or destroy his reputation"
- (25) Avez vous si peu de consideration que me vouliez ruynez et vous scandaliser tout a coup
"do you have so little consideration that you want to ruin me and slander yourself?"

In (23), despiter takes an abstract object, and its relationship with the subject is clearly active. Compare, however, (23) with contemporary French in (26):

- (26) Son récent échec au concours a dépité Pierre
"his recent failure on the exam vexed him."

The relationship of échec with dépiter is no longer active. The application of se-passive in (27) yields an ungrammatical result, just as in (13):

- (27) *Pierre se dépite de ce qu'il a échoué au concours.

It is interesting to compare diffamer and scandaliser in 16th c. French with contemporary French. Although their meanings were once very close, they have become quite distinct now, mainly because their relationship with their subjects have changed. Diffamer in (24) takes a non-human, non-active subject. In contrast, in contemporary French, it means to slander and requires that its subject be active.

Consider now (28) and (29) as compared with (25):

- (28) Que Pierre boive comme un trou scandalise Marie
"that Pierre drinks like a fish scandalizes Marie"
- (29) Marie se scandalise de ce que Pierre mange comme un cochon
"Marie is shocked that Pierre eats like a pig."

embedded under the verb requerir. Note also the incompatibility of moods in these two sentences: s'excuser is followed by the indicative n'avoient eu... and therefore cannot control the subjunctive of pardonner. Conversely, requerir is followed by the subjunctive baillast, and cannot control the indicative estoit soupessoneux.²

There is historical evidence, then, that complement clauses in object position are linked to verbs of saying. Let us take as illustration of this point two verbs which in 16th c. French had approximately the same meaning and distribution, namely tracasser and divaguer (to wander about). Consider:

- (35) Voyant l'homme avaricieux
 ...courir et tracasser
 pour toujours de bien amasser (Des Periers)
 "seeing the stingy man
 ...running and wandering
 to accumulate wealth"

J'ay tracasse tout le Mont Saint Hilaire (Larivey)
 "I wandered all over the Mont Saint Hilaire"

and

- (36) Et les chiens...divaguent par le bois (Gauchet)
 "and the dogs wander in the woods."

The distribution of these two verbs can be found in Table 2:

Table 2

	active	-active	hum	NR		Ø	Que P
16th c.	+	-	+	-	tracasser	+	-
	+	-	+	-	divaguer	+	-
Mod.F.	+	+	+	+	tracasser	-	-
	+	-	+	-	divaguer	+	+

In modern French tracasser and divaguer now exhibit all the characteristics of psychological verbs. Their actants are constituted by a complement clause and a noun +human. However, tracasser now occurs with a non-restricted subject (i.e. a noun + or -human, + or -active or a Que P) and a +human object, as in (37) and now has the same distribution as frapper.²

tic, as activity or directionality, or syntactic, like Que P, are independent from lexical items. They provide the environment into which speakers insert verbs, thereby creating new words as their imaginations or needs allow them. Although I have given only a small sample of this phenomenon, it is conceivable that more properties could be isolated to account for other productive classes of psychological verbs. Finally, if the correlation of syntactic categories with semantic properties was firmly demonstrated, it might explain the acquisition of syntax, since the application of rules would be conditioned by a restricted number of such properties.

NOTES:

1. The data concerning 16th c. French is drawn from Huguët (1925)
2. See Higman (1979) for an intriguing observation on the role and frequency of complement clauses in Calvin's writings.

REFERENCES:

- Gross, Maurice. 1975. *Méthodes en syntaxe: régime des constructions complétives*. Paris: Hermann.
- Higman, Francis. 1979. *Le langage calvinien comme moyen de communication*. Actes du colloque littérature et communication, directed by Gilbert Gadoffre. Boulogne-sur-Seine: Institut Collégial Européen.
- Huguët, Edmond. 1925. *Dictionnaire de la langue française du seizième siècle*. Paris: Champion.

SIGN RELATIONS

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1. Introduction

Anyone who has any theoretical knowledge of language, knows that it is a system of signs, that is to say, a code. However, this presupposition has only been partially understood. One of its facets has been neglected and even left unperceived, not only by linguists, but also by semioticians in general.

To assert that a code is a system of signs is equal to saying that it is a set whose elements are signs. Consequently, when studying any code, we should examine the intrinsic nature of the elements of which it is composed, that is, the signs. What has been done up until now has dealt principally with relationships between the codes or with extra-code entities to which they refer, that is their referents, as revealed in the syntactic and semantic dimensions. More recently, the pragmatic dimension has also been investigated. In short, examination of the sign has always begun by treating it as a whole and by relating this whole to other entities. In other words, only the extrinsic relationships of the sign have been investigated.

As a consequence of this omission, the concept of sign as an element of a code has not been fully apprehended. The objective of this investigation is exactly that of trying to unravel the intrinsic nature of the sign in order for us to better comprehend the relationship that it can maintain with other signs and with the code of which they are a part.

I will not go into the minor details in respect to the polemics about these semantic relationships. Instead, following a long tradition (cf. TRABANT 1976), I accept the concept that the sign consists of a sensory element, the signifier (signifiant), and of an abstract element, the signified (signifié) as systematized by SAUSSURE (1916). Other authors have used other terms to designate approximately the same facts. Thus in north-american structuralism, the expressions "form" and "meaning" frequently occur, as we see in the writings of authors such as BLOOMFIELD (1933), BLOCH/TRAGER (1942), and FRIES (1952). Still other authors, for example HJELMSLEV (1961), have employed the terms expression and content, and these are the ones I will use primarily.

Accepting as a presupposition that the sign is a binary reality, which consists of an expression and a content, we can move on to examine the existing relationships between these two aspects. Next, we will see some exemplifications, that is, we will interpret some codes according to the type of relationships that

exist between the expression and the content of the signs of which the codes are constituted.

In summary, what I intend to point out is that there is more than one type of expression and of content. Both of them may be manifested by two different types. Besides this, any type of expression can be related to any type of content and vice-versa.

2. Expression and Content

Various authors have perceived that the relationship between expression and content is more complex than we are made to believe by the dicotomy. One of these is Bernard Pottier. For this author, the Saussurian dicotomy, signifier-signified, was inadequate. Because of this, he split the level of signified in two. This is represented in Figure 1, in which sd is signified, sx is syntax, and sr is signifier. Though in another passage, he in-

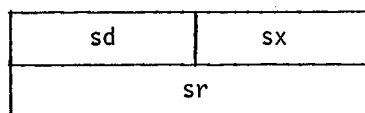


Figure 1

cludes "tactic means" (whose unit is the tacteme), among different possible ways of expression, Pottier falls short of an adequate characterization of the sign. So much so that he does not include the "tactic means" (the tacteme) in his sign model, since this would have caused him to also split the signifier, which he did not do in Figure 1 (POTTIER 1967).

The one who came closest to the ideal view of the intra-sign relationships was BLOOMFIELD (1933), although as a good behaviorist, he felt it was impossible to study meaning from a linguistic perspective. From the point of view that interests us here, the Bloomfieldian theory of sign can be reduced to roughly the following.

Though he does not use the word "sign" explicitly, as is customary in the European tradition, Bloomfield defines it when he speaks of "form" (expression) and "meaning" (content). He states that: "A form is often said to express its meaning" (p. 141). In chapters 10 and 16, he lays out in detail the types of expression and of content that are possible in linguistic code, that is to say, what is valid for every reasonably developed code. Thus, the smallest meaningful lexical unit is the morpheme, whose meaning is a sememe. In the same way, the smallest meaningful unit of grammatical form is the tagmeme, whose meaning is the episememe (p. 166).

In summary, Bloomfield recognizes that there are not just tactic signifiers (tagmemes), but also tactic signifieds (episememes). He even notes that there are crossovers between the two types of expressions (the lexical, that is morphemic, and the grammatical, tagmemic) and between the two types of content (the

lexical, sememic and the grammatical episememic). One notes this when he asserts, for example that substantive expressions can have "positional meaning" of "performer of an action" (p. 267), which is a tactic signified (meaning).

Bloomfield came very close to an adequate characterization of the relationships within the signs. He only missed by considering the study of meaning as being beyond the reach of the science of language. For example, he did not make it clear as to whether the morpheme is a unit exclusively on the level of expression (form) or is a mixture of expression and content (p. 161 and 167). The same can be said of the tagmeme and of the episememe. Starting from the possible equation below, it appears that the relationship

$$\frac{\text{morpheme}}{\text{sememe}} = \frac{\text{tagmeme}}{\text{episememe}}$$

between the content (denominator) and the expression (numerator) is not one of inclusion of the first in the second, but of exclusion. Nevertheless, when he asserts that the morpheme is the smallest meaningful unit, it seems to suggest that the content is included in the morpheme rather than associated with it.

In any case, Bloomfield, to an admirable degree, perceived the concept of the sign, or better yet, the relationships within signs, which I intend to present below. Various other authors such as BLOCH/TRAGER (1942) and FRIES (1952), have followed, though partially, the Bloomfieldian concept.

More recently, Sydney M. Lamb, mentor of stratificational grammar (cognitive or relational), recovered and developed the concept of constructional meaning. He argues: "Consider the English construction exemplified by 'redhead', 'redcap', 'white-cap', etc. It seems clear that the meaning of these forms is not entirely accounted for by the meaning of their constituents. A redhead is not a head, but a person having a red head. That is, an important part of the meaning is to be assigned to the construction itself" (LAMB 1975, p. 11).

Through the concept of nexion, Lamb's theory makes the relationships in question completely explicit. Consider Figure 2 in

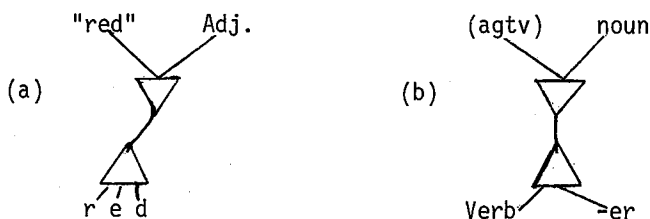


Figure 2

which (a) and (b) are signs. In (a) we have a sign whose expression is "red" and whose content is "red" plus the function of adjective. In (b), we have a sign whose expression is a combina-

tion of "verb" plus "-er", which points to the contents (functions) of "agentive" and "noun" (LAMB 1975, p. 13).

In this way Lamb went a little further than Bloomfield. Even so, he did not take the classification to its ultimate consequences of demonstrating the crossover relationships, along with the direct ones that are seen among the two types of expression and of content.

Philosophers like GRANGER (1960) and CARNAP (1953, 1969) have also partially perceived the complexity of the intra-sign relations. Nevertheless, from the point of view that is of interest to us here, they did not even come close to the linguists mentioned above (especially Bloomfield and Lamb); so I will not comment on their ideas.

3. The Intra-sign Relations

The definition of language given by various scholars is approximately the following: language is a set of symbols and of rules for the combining of these symbols. Such a definition is found in CHOMSKY (1957, pp. 21-22), GRANGER (1960, p.33), ALCOFORADO (1973, p. 42), etc. The divergencies of terms is very great. For example, it has been said that language is a set of words and of rules that determine their combinability into phrases, or that language consists of a dictionary and a grammar (ALCOFORADO 1973, p. 42).

Setting aside such divergencies and emphasizing that "language" is nothing more than a synonym for "code", we can consider as an established principle, the following: code is a set of signs and of combinatory rules for these signs. Meanwhile, I asserted above that a code is only a set of signs. There seems to be a contradiction here. At this point it becomes necessary to introduce one more element: the combinatory rules are signs. This way, the definition of code, as a system of signs, continues to be valid. This will become clearer after the presentation of the components of the sign and of its inter-relationships.

In my doctoral dissertation (COUTO 1978, pp. 13-15), I classified the two aspects of the sign as seen in Figure 3, with some

Sign	
Expression	Content
Signifier	Signified
Taxis	Function

Figure 3

minor modifications. As noted, the sign is a bifacial reality in that it consists of an expression and a content. However, there are two different types of expression and two different types of

content. Through examples from various languages, we can characterize the two aspects of the sign in more detail.

Consider (1)-(4) below, in which the expression (a) always corresponds to the content (b) of the same number.

- (1) (a) *cunhã* (Guarani)
(b) "woman"
- (2) (a) *cunhã memby* (Guarani)
(b) "son of the woman"
- (3) (a) *amo Patriam meam* (Latin)
(b) "I love my country"
- (4) (a) *Stammbaum/Baumstamm* (German)
(b) "genealogical tree/tree trunk"

The Guarani expression (1) (a) is an acoustic sensory datum (or graphic when written), that constitutes what I call signifier (p. 14). In this case, there is the sensory (expressional) part of everyone of the words from the natural languages and of the simple signs of which the codes are composed in general. Even parts of the words (e.g., the morpheme) have as expression a signifier. The content (1) (b), to which this expression (signifier) is associated, is an element from the culture (content), that is, it is an "adult human being of the female sex" which among other things can also be a daughter, mother, wife, sister, etc. This cultural content is the signified of the sign (p. 14).

The expression (2) (a), in turn, consists of the signifiers "*cunhã*" (woman) and "*memby*" (son, when spoken by a woman). The order of these signifiers is associated with the content underlined in (2) (b). One perceives, consequently, that part of the content has as expression, not a signifier (sensory datum), but the arrangement of the other signifiers, i.e., "*cunhã*" before "*memby*". So much so that "*memby cunhã*", should it occur, would mean "the woman of the son." Expressions like this, which consist of arrangements of other expressions, I call taxis (pp. 14-15). The content that is referred to will be named function (pp. 14-15), as long as it does not deal with a datum from the culture, but with relationships that can be verified inside the code itself.

A still better example would be contents such as "subject", "direct object", etc., which have as expression (taxis) the position of the signifier which, in this case, corresponds, in relation to the others, to before and after the verb, respectively. But (1) and (2) are extreme types, such as those in which a signifier is the expression of a signified as opposed to those in which a taxis is the expression of a function.

Examples (3) and (4) show us that the relation between expression and content is not always as seen in (1) and (2). In effect, the underlined part of expression (3) (a) is a signifier

(morpheme of accusative case) that has as content, not a signified, but a function, which in this case is "goal of verbal action." In Portuguese, the same function has as expression a taxis, i.e., a position in relation to the verb (following it), with the exception of some oblique pronouns (me, te, o, etc.)

Lastly, the expressions in (4) (b) refer to different cultural contents but not because of their having different signifiers. Their signifiers consist of the same sensory elements "Baum" (tree) and "Stamm" (trunk). What distinguishes the expression "genealogical tree" from that of "tree trunk" is the order, that is, the arrangement of the signifiers "Baum" and "Stamm". Consequently, it has a signified whose expression is a taxis. It can also be said that the expression of signs like this one is within the code, as is the content (function) which was mentioned in (3) (b) also. In the case of the functions "object" and "subject" in Portuguese, both expression and content are within the code.

From what has become evident up until now, it can be seen that the intra-sign relations are not as simple as one would imagine. In fact, various theories regarding the sign lead us to think that they are as simple as those found in Figure 4.

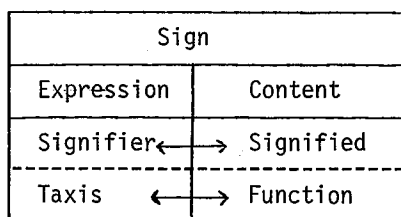


Figure 4

But, in reality, they are like those seen in Figure 5 (cf. COUTO forthcoming).

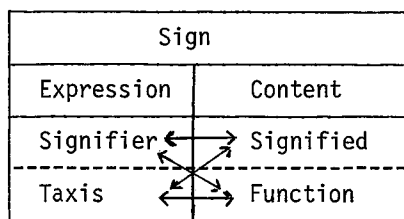


Figure 5

There are two types of expression and two types of content. In the different signs that make up a code, each expression can be the support for any one of the two contents and each content can have the support of any one of the two expressions.

This indicates that any reasonably developed code consists of four types of signs. First of all we have signs which have as expression a signifier and as content a signified. We can call this type of sign referential or denotative signs. Secondly, we have the signs whose expression is a taxis and whose content is a function. To these we can give the name of tactic signs. Thirdly, we have the mixed signs, i.e., those in which the relation between expression and content is established, not horizontally as between signifier and signified, but obliquely, that is, between taxis and signified or between signifier and function. For lack of a better term, we can call the signs which have a taxis for the expression and a signified for the content, signified mixed signs. Those whose expression is a signifier that is associated with a function can be given the name signifier mixed signs. In reality, there are just three types of signs: referential, tactic and mixed. I spoke above of four types, because the mixed ones subdivide into signifier mixed signs and signified mixed signs.

The referential signs and the signified mixed signs refer to a cultural element which in turn is inferred from a phenomenon of the physical or social environment. Cultural element is approximately the "Sinn", and the phenomenon from the physical or social environment is the "Bedeutung" of Frege. The latter is also the "referent" of Peirce.

The tactic and the signifier mixed signs, on the other hand, do not have as content a reality that is understood from a datum outside the code. Their content reverts to the actual functioning of the code. As to the purpose of this type of signs, GRANGER (1960) uses expressions such as "syntactic meaning" (*sens syntactique*) (p. 37) and "syntactic function" (*fonction syntactique*) (p. 38). Granger adds that such signs no longer refer to objects that transcend the language, but to its own structural rules (p. 40).

In summary, the referent of the first type of signs is outside of the code; the referent of the second type of signs is inside of the actual code. The first refers to an extra-code reality, the second refers to the code itself, and therefore is an intra-code relationship.

The tactic and the signified mixed signs also have something in common. The expression of neither of them is sensory datum. On the contrary, it is the result of a combination of expressions (signifiers) that already exist in the code, and the essential thing is how they are combined. Therefore, the first are called tactic and the second, mixed. In this way they represent a situation diametrically inverse to the tactic and signifier mixed signs conjunctly, where the content is within the code, i.e., intra-code. Here it is the expression that is intra-code, since it is the result of the arrangement of elements already existent in the code.

From what has been said, one can conclude that there are two extreme types of signs. On the one hand, we have the referential signs in which both the expression (signifier) and the content (signified) have roots in the reality external to the code, i.e.,

in which the expression and the content are extra-code. On the other hand, we have the signs in which neither the expression (taxis) nor the content (function) have roots in the external reality. Both of these are intra-code.

In the transition zone between these two extremes, one encounters the mixed signs. In the case of the signifier mixed signs, the expression is extra-code, but the content is a function, hence intra-code. Whereas in the case of the signified mixed signs, the content directs itself to a reality external to the code, while the expression results from arrangements that exist inside the code. Consequently, the content is extra-code, while the expression is intra-code.

At this point, it would be interesting to take another look at the definition of code. I stated above that: "a code is a system of signs." Then, based on the fact that any language consists of a vocabulary and a grammar, I asserted that not only the lexical items are signs, but also the combinatory rules are part of the code, i.e., they, too, are signs. Therefore, the rules are actually signs, and in fact, tactic signs, if they are of that extreme type. In the intermediary instances, the rules are mixed signs.

Following these specifications, we can perfect the definition of code. Code is a system of signs. The signs can be referential and/or tactic. But if we admit to the presupposition that the combinatory rules are also signs, we can simply state that a code is a system of signs, without the additional details mentioned above.

4. Examples and Applications

Having now a precise delimitation of the set (code) and of its elements (signs), we can move on to consider different languages in order to define them in terms of the signs of which they are constituted.

Science, for example, is a language (GRANGER 1960, pp. 12-15, CARNAP 1953, pp. 123-128). Therefore, it is semiotic in nature (GOPNYK 1976, pp. 1-12). Consequently I will examine, though superficially, three types of signs in relation to some of the codes in which they occur. Included here are both the formal and the factual sciences (CARNAP 1953). Or from another perspective, we have not just the social sciences, but also the natural sciences and mathematics as being of interest to semiotics for the simple fact that they are languages (systems of signs).

4.1 The Referential Signs

Before anything else, we should recapitulate that the denotative or referential signs are those which have as expression, a signifier, i.e., a datum perceivable by the senses, and as content, a signified, i.e., a cultural element which is a reality outside of the code itself. In the end, they are signs that have extra-code expression and content.

The social codes consist essentially of referential signs.

Among them can be cited, in the first place, language. A great many authors feel that language has the following semiotic levels: semantic, syntactic, morphological, and phonological. Taking syntax in its traditional sense and not according to the concepts of stratificational linguistics as defined by LAMB (1966, 1975), it can be noted that it does not pertain to this section (which deals with referential signs) since it consists only of tactic signs (cf. 4.2). At this point, it is enough to observe that in reality, syntax is more complex than various modern linguistic theories would have us believe. This leaves us with the semantic, morphological, and phonological levels.

There is an old terminology which classifies morphemes (words) as "full" (or lexical) and "empty" (or grammatical). In spite of it not being entirely true, it furnishes a way to classify the morphemic linguistic signs. A large part of them are referential, as for example "house", "John", "idea", "God", "good", "love", "-s" of "books", etc. As stated by BLOOMFIELD (1933, pp. 161, 166) the morpheme consists of a phonetic form and a meaning. In this case the meaning is cultural, since the morphemes in question are referential. The plural morpheme "-s" is referential because its content is "more than one", that is, something independent of the code.

As to the semantic level, it should be observed that it consists of just one part of the sign, i.e. its content (signified), even though, from a stratificational-relational perspective (see below), it also consists of signs and not parts of signs.

The phonological level deserves to be studied minutely. It can be asked from the beginning, whether phonemes and their features are referential signs, or if they even are signs. For Jakobson, they are not referential signs, since he begins with the presupposition that neither the phonemes nor the distinctive features have a constant and univocal denotation. Rather they would be signifier mixed signs (JAKOBSON 1967). The philosopher GRANGER (1960, p. 77) seems to be of the same opinion, even though at times he seems to contradict himself (p. 34). SAUMYAN (1971), in spite of his beginning from a semiotic perspective in his approach to the study of language, does not make the status of the phoneme and the feature very clear. On the other hand, he considers both of them diacritics (differentiators), and places them on the same level (p. 70).

It is in relational (or stratificational) grammar that the phoneme and its feature (phonon) are definitely considered as referential signs (cf. COUTO forthcoming). A relational grammar is very important in the context of our interests here, that is, in a semiotic approach to language, which I will now examine in more detail.

In this theory, language is a code composed of subcodes. Traditionally, it recognizes the phonemic, morphemic, lexemic and sememic subcodes. (To facilitate the argumentation, we will speak of code, even in case of the subcodes.) Utilizing a complex graphic representation that will not be discussed here, the theory gives evidence that the lower signs of the phonemic code, the pho-

nons, have their content in the phonemes. These have their content in the morphemes, which, in turn, have their content in the lexemes. The content of the lexemes is in the sememes which ultimately have their content in the cultural reality outside of the linguistic code. Consequently each semiotic level (subcode) has denotative or referential signs, since each of them has its content outside of the code to which it pertains. As a code, each level consists of signs, that is, a set of signs. But as with any code, each level is not composed of merely referential signs. There are also the combinatory (tactic) possibilities and restrictions of each level that are signs, i.e., tactic signs. Due to this, syntax is more complex than one would imagine (cf. LAMB 1966, 1975; COUTO 1981 and forthcoming). There is not just one, but various syntaxes (tactics) or combinatory rules. There are as many rules as there are semiotic levels allowed for in the theory.

Among various other codes that essentially consist of referential signs, there can be mentioned the ones that trans-code language, such as "Morse code", "Braille", and "sign language", on the one hand, and "mimicry", "paralanguage", "traffic signals", "rituals", "folk-traditions", "religion", "mythology", "heraldry", etc., on the other hand. It should also be pointed out that all of the factual sciences, according to CARNAP (1953), are expressed in referential signs, even though he emphasized only syntax.

It can be argued that codes such as rituals, etiquette, and protocols, do not consist of referential signs, since the attitudes (signs) assumed by individuals in relation to them are mere formalities. In other words, they are signs whose content reverts back to the code itself. Since this deals with a peripheral, and therefore polemic topic, I do not intend to discuss it here.

4.2 The Tactic Signs

In contrast to the referential signs are the tactic signs. In these, both the expression (taxis) and the content (function) are internal to the code. The codes, which typically consist of tactic signs, are those of the formal sciences such as mathematics, logic, and geometry.

The formal sciences, as the name implies, deal essentially with relationships, that is, with forms. Regarding the terms of the old distinction between "form" and "matter", it could be said that these sciences consider only the first term, "form", (for this distinction, cf. LALLANDE 1968 pp. 370-372). But since there is no form without matter (at least in practice), it follows that in the case of mathematics, of logic and of geometry, there is a fusion of form and matter; they are one and the same thing.

In summary, these are languages in which expression and content are confounded. "Form" (taxis) and "matter" (function) are the same. At first glance, we might think it is not so. The signs of mathematics, for example, are like many signifier mixed signs, since entities such as "one", "two", "three", "zero", "one million", etc., are pronounced (or written), and therefore have as

expression, a signifier. In reality, the sounds (or the graphic forms) of these signs are signifiers of the language, and not of mathematics, in that they are also words, the same as any others in the language. The signs of logic and mathematics are mere abstract relationships in which the expression and content are confounded. They simply consist of taxis and function. Their visual and acoustic representations are mere mnemonic recourses.

Perhaps the identity of expression and content of the signs of formal languages can be more clearly seen in the case of geometry. The content of the triangle, for example, is a "figure with three sides and three angles". The expression, in turn, is not the figure eventually drawn by me with blue ink on white paper, but the "triangular configuration" itself. Again, expression and content are the same thing. Both are immanent to the code itself and neither of them transcends it.

4.3 The Signifier Mixed Signs

The signifier mixed signs, like the referential ones, are those endowed with a sensory expression, but whose content reverts back to the code itself, as in the case of the tactic signs. In brief, these have the expression of the referential signs, but the content of the tactic signs, which is why they are called "mixed".

A code which is undoubtedly made up of signifier mixed signs is music. ADORNO (1973) begins his essay about the language of music with the following phrase: "Music is by nature, language" (p. 71), and in this way asserts from the start that it is a code. Nevertheless, it is not exactly equal to language, that has the peculiar function of vehicle (*Vermittlung*), which is foreign to music. What it has in common with language is essentially the fact that music is presented in "temporal sequences of articulated sounds" (p. 71). Thus one concludes that its expression is a signifier, as in language. One difference, however, is that the signs of the musical code (e.g., the tones *do*, *re*, *mi*, *fa*, *so*, *la*, *ti*) do not represent an extra-code reference. Despite his desire to contest the claim that "meaning is alien to music", Adorno must admit that music has some sort of contextual meaning. He adds that "the essence of these musical meanings lies in their own nature, and not in any eventual referent" (p. 72). In the end, he asserts that "musical content is actually the sum total of all that underlies the grammar and syntax of music" (p. 75).

As we see, the musical code consists of signifier mixed signs, since sound is its raw material. Nevertheless, this signifier is related, not to a referent external to the code, but to the actual musical context, which gives it the characteristic of function.

It is clear that, as a code, music also presents combinatory rules (taxis); so much so that it is frequently associated with formal languages. Adorno himself said that the sequence of sounds is logical by nature" (p. 71). Yet the characteristics of the signs presented here permit us to clearly perceive the differences

that exist between music and formal languages. In effect, the former is constituted essentially of signifier mixed signs; whereas the latter consists exclusively of tactic signs, as we have seen. Likewise, as with any code, the musical code also contains tactic signs.

4.4 The Signified Mixed Signs

Signified mixed signs are those that refer to a reality external to the code; therefore its content is a signified, but it does not have its own expression. Rather, this results from the combination of independent expressions that already exist in the code and constitutes a taxis. Idioms are the most common linguistic examples of such signs.

On the other hand, I believe we can also offer some examples taken from non-linguistic codes, even though investigation in this area is still in its infancy. Let us use traffic signs as an illustration. The symbol that indicates "no parking" (signified) is a "P", crossed by a diagonal line, inside of a red circle. On the other hand, the "parking" sign is the same symbol without the diagonal line. Both the circle and the diagonal line occur in various other combinations. Consequently, the diagonal line, the circle, the "P", etc., are part of the expressional repertoire (signifier) of traffic signs. However, they do not signify anything in isolation. It is through the different combinations of these elements that they take on content, which are signifieds due to their link with the social order external to the code. That is, the signs of the traffic system fulfill all of the requirements of the signified mixed sign: its content is extra-code (signified), but its expression is intra-code (taxis). For a somewhat different view of this, see PRIETO (1966).

5. Concluding Remarks

The validity of intra-sign relations, shown above, seem to me to be undeniable. In effect, the concept of sign that they presuppose, permits us to define, in a clear and simple manner, the different codes which exist in our culture.

In the first place, I would like to point out that it is possible for us to clearly separate formal from empirical science by asserting (as did Carnap and Granger) that science is a language (system of signs). The former consists essentially of tactic signs; whereas the latter is made up, above all, of referential signs.

Secondly, the linguistic code can be distinguished, with precision, from that of sciences in general (formal and empirical). As we have seen, the linguistic code is extremely complex in that it is comprised of various subcodes, i.e., phonemic, morphemic, lexemic and sememic. All of these have the same characteristics of codes in general (they consist of referential and tactic signs). In contrast, the code of science in general is a mono-stratal, that is, it presents only one semiatic level.

Thirdly, it is possible to explain what formal languages and

the code of music have in common. They are similar from the point of view of the content of their signs: in both of them, it is inside the actual code, i.e., intra-code. With relation to expression, they are completely different. In the formal languages, expression is essentially that of taxis, which is why their signs are basically tactic. In music, however, expression is signifier and because of this it has signifier mixed signs, par excellence.

Finally, I would like to clarify one point that remains obscure in Saussure. According to him, there are two types of relationships between the signs which compose the code: syntagmatic relations and associative, or paradigmatic, relations. The paradigmatic relations pertain to the system, the langue. The syntagmatic relations, in turn, would pertain to the parole, since they would be the result of combinations which emerge from the chain of speech in the up-dating of the system. Only some of the combinations (those that have already been crystallized), would also pertain to the langue. At any rate, Saussure does not appear to be very sure of himself here, (SAUSSURE 1916, pp. 172-173). Nevertheless, with some refinement of the definition of code, made possible by the conception of sign shown above, it becomes clear that the syntagmatic relations likewise belong to langue. They are nothing more nor less than tactic signs, which enter into the make up of any code. Actually, the distinction between langue and parole is irrelevant here, since all of the discussion revolves around systems (systems of signs). In any case, the two types of relations pertain to the same levels of abstraction, a fact which can only be perceived when one acknowledges tactic signs.

Bibliography

- Adorno, Theodor W. 1973. "Fragment über Musik und Sprache". In: Sprache.Dichtung.Musik, Knaus, Jakob (ed.). Tübingen, Max Niemeyer Verlag, 71-75.
- Alcoforado, Paulo. 1973. "Noção de linguagem formal". In: Littera 7, 42-51.
- Bloch, Bernard and Trager, George L. 1942. Outline of Linguistic Analysis. Baltimore, Linguistic Society of America (Waverly Press.)
- Bloomfield, Leonard. 1933. Language. New York, Holt, Rinehart and Winston. (1961).
- Carnap, Rudolf. 1953. "Formal and factual science". In: Readings in the Philosophy of Science, Feigl, H. and Brobeck, M. (eds.). New York, Appleton-Century-Crofts, 123-128. (1934).
- _____. 1969. "The logical syntax of language". In: Problems in the Philosophy of Language, Olshewsky, T.M. (ed.). New York Holt, Rinehart and Winston, 45-56. (1935).

Chomsky, Norm. 1957. Syntactic Structures. The Hague, Mouton.

Couto, Hildo H. 1978. Das Konsonantensystem des Guarani. Doctoral Dissertation defended at the Universität Köln, West Germany.

_____. 1981. "Codificação lingüística de eventos". In: Ensaio de Lingüística Aplicada ao Português, Couto, H.H. (ed.). Brasília, Thesaurus.

_____. (forthcoming). Lingüística e Semiótica Relacional.

Frege, Gottlob. 1892. "Über Sinn und Bedeutung". In: Zeitschrift für Philosophie und Philosophische Kritik 100. (Portuguese translation, Littera 5, 102-118, 1972).

Fries, Charles C. 1952. The Structure of English. London, Longman. (1971).

Gopnyk, Myrna. 1976. "Scientific theories as metasemiotic systems" Semiotic Approaches to Theories. Toronto, Toronto Semiotic Circle, 1-12.

Granger, Gilles-Gaston. 1960. Pensée Formelle et Science de l'Homme. Paris, Aubier.

_____. 1971. "Langue et systèmes formels". Langages 21, 71-87.

Hegenberg, Leônidas. 1959. "Semiótica e axiomática". "Revista Brasileira de Filosofia" 9.

Hjelmslev, Louis. 1961. Prolegomena to a Theory of Language. Madison, The University of Wisconsin Press.

Jakobson, R. 1967. "Para a estrutura do Fonema". Fonema e Fonologia. Rio de Janeiro, Livaria Acadêmica, 15-52.

Lallande, A. 1968. Vocabulaire Technique et Critique de la Philosophie. Paris, PUF.

Lamb, Sydney M. 1966. Outline of Stratificational Grammar. Washington, Georgetown University Press.

_____. 1975. Semiotics of Language and Culture: a Relational Approach. New York, Wenner-Gren Foundation for Anthropological Research.

Pottier, Bernard. 1967. Présentation de la Linguistique. Paris, Klincksieck.

Prieto, Luis J. 1966. "La sēmiologie". In: Le Langage (Encyclopédie de la Pléiade). Paris, Gallimard.

- Y
Saumyan, Sebastian K. 1971. Principles of Structural Linguistics.
The Hague, Mouton.
- Saussure, Ferdinand de. 1916. Cours de Linguistique Générale.
Paris, Payot. (1971).
- Trabant, Jürgen. 1976. Elemente der Semiotik. Munich, Verlag C. H.
Beck.

METAPHORICAL SENSES OF ZERO VERBS IN AMERICAN ENGLISH¹

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I

WHAT IS METAPHOR?

In modern textbooks of linguistic semantics metaphor is usually illustrated and explained rather than given a precise definition. F. R. Palmer (1976, p. 66) describes metaphor as that kind of relationship between meanings where a word appears to have both a "literal" meaning and one or more "transferred" meanings and Ruth Kempson expresses the opinion that metaphor should be part of a theory of pragmatics (Kempson, 1977, p. 192, *et passim*). Leech (1974, p. 216) has the "rule of metaphorical extension" which, he admits "goes only some way to an explanation of metaphor"², while Stephen Ullman gives a brief account of the psychological background of metaphor, taking the view that in metaphor "there are always two terms present: the thing we are talking about and that to which we are comparing it... however, the thing that we compare to something else is identified with it by a kind of a verbal shorthand" (Ullman, 1979, p. 213). Among "animal metaphors" and, specifically, in the large group of animal images which are transferred into the human sphere Ullman (1979, p. 215) lists a few examples which are zero verbs: dog a criminal, ape sb., parrot sb.'s words. Another observation of Ullman's worth mentioning is that one of the basic tendencies in metaphor is to translate abstract experiences into concrete terms (Ullman, 1979, p. 215), i.e. metaphorical usage implies a transfer from concrete to abstract. As will be seen, some of the metaphors contained in the zero verbs we are concerned with imply also an extension from concrete to concrete (a phenomenon known elsewhere), as in doctor a drink (cf. doctor a child) or harness water power (cf. harness a donkey).

The Notion of the "Root Metaphor" or "Radical Metaphor"
According to Max Müller (cf. Shibbes, 1971, p. 33) all words derive metaphorically from a fixed number of basic root words and though this is an unproven claim, the notion of the "root metaphor" or "radical metaphor" is a useful one because many words have been derived via metaphor. Urban (1939, p. 432) sees in it the "representative or symbolic function of language" and defines the radical metaphor in the following way:

One word is predicated of a referent other than its own in metaphorical transference, by a "common rule of reflection". The "common rule of reflection" is an intuitive quality which the speaker intends and the listener understands in speech communication. This "common rule of reflection" allows a word to be used metaphorically for an object other than its own object. (p.432)

Thus in the following example by Mencken (1957) the pedagogical effort to police the national speech the zero verb police would be easily understood even if it were heard for the first time, because the verb police is a well-established verb in the language in such phrases as police the park or police the streets.

Max Black on Metaphor

Max Black (1962, pp. 25-47) rejects both the substitution view of metaphor, according to which a metaphor is just a substitution for a literal statement, and the comparison view according to which metaphor is, in fact, a condensed or elliptical simile (e.g. Richard is a lion can be taken to mean Richard is like a lion). He favors the interaction view, which is derived from J. A. Richards' theory of metaphor. According to Max Black:

The new context (or "frame") imposes extension of meaning upon the focal word; the old and new meaning must be attended together; two thoughts are connected and active together, interilluminate and co-operate. (quoted in Shibbes, 1971, p. 153)

Recent Views on Metaphor

A philosopher of language, John Searle rejects the simile interpretation of metaphor and advances a detailed theory of metaphor, which is intended to answer the question "How do metaphors work?". Looking at language primarily as a communication system, Searle probes into the set of principles which, if communication is to be possible, speaker and hearer must share when they are uttering metaphors.

A Formal Approach to Problems of Meaning: Uriel Weinreich

Weinreich's work on idioms (Weinreich, 1969) seems to be of particular relevance for the problem of metaphorical expressions; in view of the fact that many idioms are conventional metaphors⁵; it turns out, in fact, that some of the formulas that he invented for idioms or semi-idioms can be used to describe some of the types of zero verbs which are metaphorical in meaning.

Weinreich's Formal Representation of Idioms

The common definition of an idiom as a complex expression whose meaning cannot be derived from the meanings of its elements is symbolized by Weinreich (1969) in the following notation: capital letters (representing some sequences of phonemes), lower-case letters (representing the sense of each such sequence) and the symbol f (standing for the cumulative sense which is some kind of function of the component senses). Thus (2a) (in Weinreich's numbering) represents a literal construction and (2b) re-

presents an idiom (Weinreich, 1969, p. 27):

$$\frac{A}{a} + \frac{B}{b} = \frac{A + B}{f(a,b)} \quad (2a)$$

$$\frac{C}{c} + \frac{D}{d} = \frac{C + D}{x} \neq \frac{C + D}{f(c,d)} \quad (2b)$$

A further analysis led Weinreich to reformulate (2b) in such a way that the components of an idiom are attached to a non-terminal node M_1 and the function is marked as f_i , since there is more than one combinatorial semantic function in any language and since a particular f_i is associated with each non-terminal node of the syntax which is capable of dominating a binary branching in the deep structure. Thus Weinreich replaces 2b by 7:

$$\begin{array}{c} M_1 \\ \swarrow \quad \searrow \\ \frac{A}{a} \quad \frac{B}{b} \end{array} \rightarrow \frac{A + B}{x} \neq \frac{A + B}{f_i(a,b)} \quad (7)$$

According to Weinreich (1969, p. 30) the fact that in 7 the resulting sense in the construction $A + B$ is not the expected semantic function f_i of the component senses a and b defines the "phrasological phenomenon" in the most general terms.

Solomon E. Asch: A Psychological Approach

In his paper "The Metaphor: A Psychological Inquiry" (1958) Asch calls attention to the tendency of English speakers to describe the workings of emotions, ideas, or trends of character by employing terms that also denote properties and processes observable in the world of nature (e.g. We hunger and thirst for knowledge; Asch, 1958, p. 86). An interesting study of metaphor across several languages, his paper lacks a rigorous formalism.

Michael Reddy: the Conduit Metaphor

Reddy (mimeographed, p. 1) claims that language is a "conduit" through which "we must successfully pass thoughts and feelings"; hence the expressions Try to put those thoughts and feelings into words and I simply cannot get any meaning out of that sentence. Like Asch, Reddy makes no attempt to formalize the particular type of metaphor he is concerned with within some linguistic framework.

Lexicalized and Non-Lexicalized Metaphorical Zero Verbs

As is the case with literal zero verbs, many zero verbs containing metaphors are part of the lexicon; communication would be impeded if speakers were to use new metaphors each time they wanted to say something. On the other hand, some zero verbs do not seem to have been lexicalized, e.g. spider (The camera spidered round the corner -Bladin, 1911) and in order to distinguish the latter from the former, we might employ the term pragmatic metaphor, following Charles Ruhl (1976), who distinguishes

between semantic metonymy and pragmatic metonymy. The guiding principle in our study was to deal with those zero verbs which could be said to represent "semantic metaphor", i.e. which should be regarded as part of LINGUISTIC knowledge.

II

"Metaphorical zero verbs" can be divided into the following groups:

- (1) Metaphorical zero verbs with no literal counterparts
- (2) Metaphorical zero verbs with literal counterparts
- (3) Idioms
- (4) Zero verbs derived from nouns which are used as metaphors

Metaphorical Zero Verbs with No Literal Counterparts

An example of these verbs is crane one's neck where we can recognize not only the process of zero derivation, but also the use of metaphor by which the action of craning one's neck is perceived as similar to that of the bird crane.

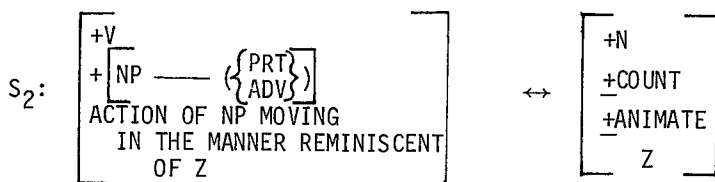
In order to capture the lexical relationship between a metaphorical zero verb and its parent noun, we have adopted Jackendoff's proposal of rules of semantic redundancy (Jackendoff, 1975). The morphological rule M_1

$$M_1: \begin{bmatrix} /y + 0/ \\ +V \end{bmatrix} \leftrightarrow \begin{bmatrix} /y/ \\ +N \end{bmatrix}$$

where the double arrow means "lexically related to" will be followed by semantic redundancy rules, each of which contains the syntactic features of the words, i.e. +N, +V, the syntactic subcategorization of the verb (e.g. the information whether a verb is transitive or intransitive), the syntactic features of the parent noun, its meaning Z, and the semantic specification of the verb (on the left-hand side of the rule) containing Z. We present five semantic redundancy rules⁶ in the following order:

$$S_1: \begin{bmatrix} +V \\ + \begin{bmatrix} NP_1 \text{ — } NP_2 \end{bmatrix} \\ \text{ACTION OF } NP_1 \text{ CAUSING } NP_2 \\ \text{TO HAVE THE SHAPE WHICH IS} \\ \text{REMINISCENT OF } Z \end{bmatrix} \leftrightarrow \begin{bmatrix} +N \\ +\text{ANIMATE} \\ -\text{HUMAN} \\ Z \end{bmatrix}$$

Condition: NP_2 is a body part of NP_1
 crane one's neck, hog one's back (Bladin, 1911), beetle one's brows (Bladin, 1911), cock the ears, cock the nose, cock the eye.

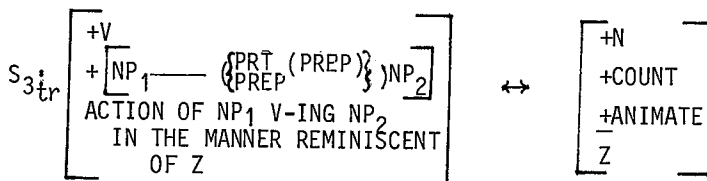


(a) Z is [+ANIMATE]

snake through the cars -Clark and Clark, 1979), worm along, bull one's way through a crowded bus, buck (of a vehicle; = to move by jerks and bounces -RHD), beetle (about, along) (McA), snail (Bladin), hare down the road⁸ (Clark and Clark, 1979), swan off (Sl. = go off casually, wander off) (McA), turtle (Time turtled away -Prenner), spider (Bladin).

(b) Z is [-ANIMATE]

bolt (off), dart, rocket, bowl (along), plow (The car plowed into our house -RHD), lump (The big oaf lumped along beside me -RHD), shuttle (back and forward), shuttlecock (Leslie), steam (He steamed out of the room), breeze (The car breezed along the highway -RHD), storm (storm out of the room -RHD), needle one's way, thread one's way, wheel (a pair of doves wheeling round and round), barrel (full speed) (Sl. = to move at a high speed).



As can be seen from the rule, a verb of this type may occur with an object only (e.g. hound a debtor), with a particle and an object (e.g. squirrel away thousands of dollars), with a preposition and an object (e.g. rat on somebody) and with both a particle and a preposition (e.g. sponge (up) on somebody).

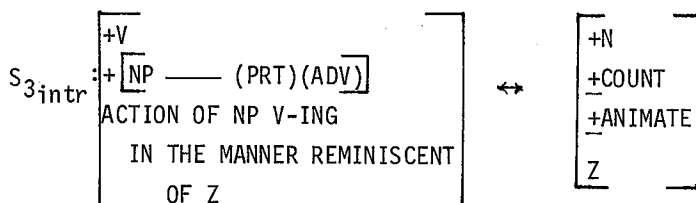
List of Verbs for S_{3tr}

(a) Z is [+ANIMATE]

mother a husband, fox the people (Clark and Clark, 1979), parrot every word (Clark and Clark, 1979), leech (on) to sb. (Clark and Clark, 1979), buffalo the audience (Clark and Clark, 1979), monkey about, ram down the soil, wolf down his meal (S.F.), dog a suspected thief, badger the officials (Time).

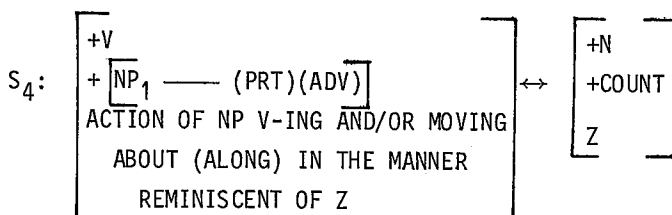
(b) Z is [-ANIMATE]

sponge (up) on sb., slough (off) bad habits (ALD)
Both these verbs, in fact, have literal counterparts, i.e. there exist the verbs sponge and slough which have kept the literal meaning of the noun in their semantic specification (= to moisten, wipe or clean with a sponge; = to shed a slough).



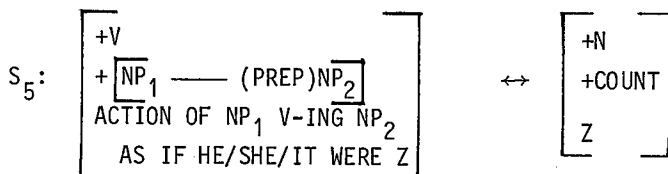
(a) Z is $\overline{+ANIMATE}$
 skylark on the beach, lark about (around), chicken out, pig at the dinner table (Clark and Clark, 1979), crawfish (out) (Dohan), mouse¹⁰ about (The burglar moused about for valuables -RHD), snake (Sl.) (= to leave unobtrusively; to sneak away), fool around (Adams), slave (Adams), mushroom, crop up.

(b) Z is $\overline{-ANIMATE}$
 ooze out (...if our revulsion and indignation oozed out through the banner headlines and in the lead stories -Time), skyrocket (...how "people" skyrocket to positions of prominence -Time), toboggan (... but since then we have tobogganed down to fifth -Time), moon about (Bladin) (She was mooning about all day-RHD), stream (of water, tears, blood etc. -Bladin), balloon, pinwheel (His thoughts pinwheeled into fantasies of his real and idealized past -Time), flood (Applications flooded in -ALD), breeze (He breezed through most of the primaries - Time), cascade (Bladin), spiral (upward) (Inflation continues to spiral upward -Time).



Condition: NP is marked $\overline{-SINGULAR}$

swarm (around television sets), flock (to Florida), clan (Bladin), horde (The prisoners horded together in the compound -Bladin), gang up (Clark and Clark), stream (hundreds of people streaming by our house in wild panic -AHD).



baby the student (Clark and Clark), toy (with the atom) (S.F.), fool sb., treasure the friendship, sucker the public (Clark and

Clark), herd the hostages into the "Mushroom Room" (Time).

Metaphorical Zero Verbs with Literal Counterparts

Many zero verbs form phraseological units when they are used with a different noun object than the expected; they can be represented by Weinreich's formula 7, cited earlier, which captures "the phraseological phenomenon". Weinreich's further analysis of $\bar{x}$ in 7 (Weinreich, 1969, p. 30) shows that one possible type of $\bar{x}$ is a semantic structure in which one of the components is distinct from the expected component $\bar{a}$; Weinreich marks it with $\bar{y}$ in 8a (his numbering):

$$\frac{A + B}{x} = \frac{A + B}{f_i(y, b)} \quad y \neq a \quad (8a)$$

Weinreich's example is "red hair", where the sense of "red" is some variant of the "absolute" sense of red because it modifies the noun hair; thus $y \neq a$.

A few examples of zero verbs presented below will illustrate the "phraseological phenomenon" represented by 8a.

The Literal Sense

air the clothes
bottle the beer
comb one's hair

doctor a child
funnel liquid

nurse a patient

The Metaphorical Sense

air one's frustrations (IG)
bottle up one's emotions
comb the cowards from the group
doctor a drink
funnel all income into research projects
nurse false hopes

Idioms

Weinreich's formula 8b (Weinreich, 1969, p. 30) represents true idioms in the following manner:

$$\frac{A + B}{x} = \frac{A + B}{f_i(y, z)} \quad (y \neq a; z \neq b) \quad (8b)$$

Ambiguity, according to Weinreich, is an essential characteristic of true idioms. The following expressions containing zero verbs can all be understood either literally or metaphorically:

oil the palms, tar and feather sb., toe the line,
fan the flame, balm the wounds, bell the cat.

Ways of Affecting Meaning Through the Use of Metaphor¹¹

Concrete to Abstract

As Ullman states (1979, p. 215) "one of the basic tendencies in metaphor is to translate abstract experiences into concrete terms". Compare also Shibles (1971, p. 32):

The physical usually is more familiar to us than ideal is; and the ideal, then, becomes more understandable as we relate it to the physical.

We notice that a great number of abstract nouns, serving as grammatical objects of zero verbs, are made more concrete and "tangible" as a result of their being coupled with these particular verbs; on the other hand, the zero verbs themselves acquire new subsenses by virtue of the fact of being used with such nouns. Examples are: air one's frustrations, cement a friendship, trumpet one's ideas, water down the courage.

Concrete to Concrete

Concrete terms are applied to other concrete terms with the aim of creating a vivid image. Examples are: harness water power, net a criminal, pump billions into Amtrak, reel off the names and dates, rivet one's eyes.

Rule S_1 (e.g. crane one's neck) represents "animal metaphors" (cf. Ullman, 1979, p. 215); they all serve to describe concrete actions of giving a particular shape to body parts.

Rule S_2 (e.g. snake through the cars) also implies a transfer from concrete to concrete: various kinds of movement are described in terms of other kinds of movement - of animals and inanimate things, artefacts (e.g. shuttle or needle) or natural phenomena (e.g. breeze, storm). Thus verbs related to S_2 contain "animal metaphors" and - to name the other two types - "natural phenomena metaphors" and "artifact metaphors".

Concrete to Concrete/Concrete to Abstract

Rule S_{3tr} refers to verbs the largest number of which embody "animal metaphors", which serve to describe actions that are either concrete (e.g. dog a suspected thief, wolf down one's meal) or somewhat abstract (e.g. *fox the people (Clark and Clark)).

Most of the verbs from the list for Rule S_{3intr} contain "animal metaphors", "natural phenomena metaphors" and "artifact metaphors". Their meanings are usually concrete (e.g. pig at the dinner table), but there are some which are quite abstract in meaning (e.g. His thoughts pinwheeled into fantasies of his real and idealized past (Time)).

Rule S_4 refers to those verbs which contain images of concrete things from nature (e.g. swarm, flock) or society (e.g. gang up, clan). They are used to describe movement or behavior. The verb clan, for example, which denotes human behavior, is rather abstract in meaning.

Lastly, Rule S_5 captures those verbs which have been derived from concrete terms (e.g. baby the student, toy with the atom); they denote actions which are either concrete (e.g. herd the hostages into the "Mushroom Room") or somewhat abstract (e.g. sucker the public (Clark and Clark)).

To conclude, most zero verbs containing metaphors seem to display the following tendencies:

- (1) a tendency to represent abstract experiences in terms of concrete images, thus making them more "tangible"
- (2) a tendency to associate various actions with animals, artefacts and natural phenomena for the purpose of creating vivid images.

Notes

¹This paper is part of the larger work Zero Verbs in American English (forthcoming) which I worked on while I was a visiting scholar at the Department of Linguistics, University of California, Berkeley. The research was supported by a Fulbright grant for the academic year 1978/79, which is now acknowledged. I am also indebted to Charles Fillmore and Karl Zimmer, as well as other American scholars I met and spoke to, for their interest.

²Cf. Leech (1974, p. 216):... it (the metaphorical rule) merely says that for a meaning 'A' we substitute the meaning 'something similar to A'.

³Urban's triadic theory of meaning distinguishes three functions in meaning: (1) the emotive (2) the indicative (3) the representative.

⁴Shibles (1971, p. 125) shows the difference between a comparison (simile) and metaphor in terms of the following: "x is y in respect z" (simile) and "x is y" (metaphor).

⁵That many idioms in English are conventional metaphors was pointed out to me by Charles Fillmore (personal communication).

⁶These are only rules for "metaphorical zero verbs". There are twenty-three more rules of this type for non-metaphorical zero verbs in Bibović, Zero Verbs in American English (forthcoming).

⁷The American Heritage Dictionary does not list the verb snail.

⁸According to RHD the verb hare is chiefly British.

⁹Adams (1973, p. 45) notes that badger once meant 'to bait someone or something as one baits a badger'.

¹⁰There is also the verb mouse with the literal meaning of the

noun in its semantic specification: to hunt for or catch mice.

¹¹I thank Aleksandar Nejgebauer for discussing this topic with me on one occasion.

Abbreviations and Signs

ALS = The Advanced Learner's Dictionary of Current English.
2nd ed. Oxford: Oxford University Press, 1963.

IG = The Independent Gazette, Berkeley

McA = Dictionary of English Phrasal Verbs and Their Idioms.
London and Glasgow: Collins, 1974.

RHD = The Random House Dictionary of the English Language.
The Unabridged Edition. New York: Random House, 1966.

Sl. = slang

S.F. = The Chronicle or The San Francisco Sunday Chronicle and Examiner

+ = The raised plus sign is used by Clark and Clark, 1979 to mark innovations

References

ADAMS, VALERIE.

An Introduction to Modern English Word-Formation. London: Longman, 1973.

ASCH, SOLOMON E.

"The Metaphor: A Psychological Inquiry". In Person, Perception and Interpersonal Behavior, ed. by Renato Tagiuri and Luigi Petrullo, Stanford University Press, 1958, pp. 86-94.

BLACK, MAX.

Models and Metaphors. Ithaca: Cornell University Press, 1962.

BLADIN, VILHELM.

Studies on Denominative Verbs in English. Uppsala: Almqvist and Wiksells, 1911.

CLARK, EVE V. AND CLARK, HERBERT H.

"When Nouns Surface as Verbs". Language 55: pp. 767-811 (1979).

DOHAN, MARY HELEN.

Our Own Words. Baltimore: Penguin Books, 1974.

JACKENDOFF, RAY.

"Morphological and Semantic Regularities in the Lexicon". Language 51: pp. 639-671 (1979).

KEMPSON, RUTH M.

Semantic Theory. Cambridge: Cambridge University Press, 1977.

LEECH, GEOFFREY.

Semantics. Penguin Books, 1974.

PALMER, F.R.

Semantics. Cambridge: Cambridge University Press, 1976.

PRENNER, MANUEL.

"The Current Tendency Toward Denominative Verbs". American Speech, pp. 193-196, October 1938.

REDDY, MICHAEL.

"The Conduit Metaphor - a Case of Frame Conflict" (mimeographed).

RUHL, CHARLES.

"Pragmatic Metonymy". The Second LACUS Forum 1975, pp. 370-380, Columbia: Hornbeam Press, 1976.

SHIBLES, WARREN A.

An Analysis of Metaphor in the Light of W.M. Urban's

Theories. The Hague: Mouton, 1971.

ULLMAN, STEPHEN.

Semantics - An Introduction to the Science of Meaning.
New York: Harper and Row, 1979.

WEINREICH, URIEL.

"Problems in the Analysis of Idioms", in Jaan Puhvel (ed.),
Substance and Structure of Language, Berkeley and Los
Angeles: University of California Press, 1969, pp.23-81.

THE VERB KICK

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Anyone who likes semantic challenges should love the verb kick, which presents such puzzles as kick the bucket, kick the habit, kick up a fuss, alive and kicking, and others. But the challenge comes not only from exotic data as these, for kick also presents puzzles when it refers "literally" to an action of the foot and leg. In this paper I want to demonstrate that literal kick is more complex and yet more unified in meaning than we usually assume.

Dictionaries and linguistic treatments note the contrast illustrated by intransitive kick in (1) and transitive kick in (2-9). (Example sentences are at the end of the paper.) The transitive is usually glossed as 'strike with the foot or leg', implying that 'foot and leg' is an inherent part of the meaning and that a blow has been landed on the entity named by the direct object. A blow seems obvious in (2-5), but less so in (6-9), where the entity named is not a solid object (grass, sand, river, air). Intransitive kick is usually glossed 'strike out with the foot or leg', implying an attempted blow, but this gloss confuses inherent meaning with contextual meaning; intransitive kick minimally indicates only a movement, with additional information supplied by prepositional adjuncts as in (10-21).¹ These adjuncts indicate "direction/path" (out (10), among (11), through (12)), or "target/goal" (at (13), toward (14), for (15), into (16), against (17)) or a combination of these (out at (18), around in (19), down at (20), down and against (21)).² Transitives can also include prepositional adjuncts (22-25), which indicate a specific location on the direct object (in the rump, between the legs).

In addition, "instrumental" phrases can occur with both intransitives (26-32) and transitives (33-38). These instruments are not only leg and foot, but also knee (27), force in leg (30), toe of slipper (31), boot (34), instep (35), heels (36), and toe of shoe (37).³ All of these instruments are clearly connected in some way to the leg or foot, and imply that the leg and foot moved as well, but it is not clear if this range of instruments can be specified semantically (strictly linguistic knowledge) or rather pragmatically (knowledge of the world)--if this distinction can in fact be made. Another question these adjuncts raise is whether 'with foot or leg' is part of the inherent meaning of kick or rather a highly predictable context. In the context of Case Grammar, Fillmore (1971, 380) assumes it is part of the context and argues that some arguments of some verbs

(such as the Instrument of kick) are part of our understanding of those verbs, needing to be lexically specified only if they require modification or are not fully expected by the hearer, otherwise serving in a way analogous to zero morphemes.

I agree in part with this interpretation, but other lexically unrealized aspects of meaning must be considered as well. A kick is usually assumed to be a FORWARD movement of the foot and leg; when it is not, it is lexically indicated as in backwards (32) and with heels (36). A more subtle aspect concerns the position of the body: if a person is standing upright, with weight on the legs, it is difficult to kick with more than one leg, and a kick would be understood as involving only one leg. But if one is lying down, suspended in air, or in water, then both legs can be kicked, and an unrealized argument could be understood as plural; plural is assumed for the suspended in air situation of (15) and the water situation of (1). Obviously, plural is also possible for a four-legged creature in an upright position. But even human upright position can be understood as plural if the kicking is continuing, as in (8, 11, 12, and 19), so it is not immediately clear how a hearer can infer singular or plural instrument in all unspecified situations. In addition, with foot is specified in (33) even though it seems predictable; perhaps it is specified there to make a contrast between instruments (with fist, with foot). Even the forward-backward contrast is not fully specifiable in all situations; (3, 15) allow backward kicking. Fillmore's formulation has the advantage of enabling us to retain the COMPOSITIONAL ASSUMPTION, that the meaning of a sentence is the sum of its parts, because even a zero morpheme can be calculated in the sum. But it may be better simply to say that an argument can be omitted if the hearer can use whatever means, both semantic and pragmatic, to recover it, or if it does not matter which of several possibilities a hearer would choose. With such a formulation, it is harder to determine what the meaning of a sentence is and how it is derived from its parts.

We could, with the data thus far, give phrase structure rules for intransitive and transitive kick; but this would be premature, because instruments can also appear as direct objects in the intransitive pattern, as in (39-64). The instruments include singular and plural of foot, leg, toe, heel, and boot. Directional adjuncts include back, out, across, over, through, in one direction, up, and backwards; goal adjuncts include against, into, at, in, and on. Adjectival adjuncts are also possible: high (62-63) and deep (64). Backward movement occurs again in (40, 42, 47, 50, 55, 60, 61). There is a further complication in that instruments can occur in subject position, with both intransitives (65-70) and transitives (71). The varying position of Instruments was one of the inspirations of Case Grammar, and their analysis one of its strengths; a simple intransitive-transitive distinction is unable to deal fully with the possibilities.

The solution I propose derives again from some observations by Fillmore (1971, 385). He notes that the verb tie occurs with three quite different direct objects in the sentences He tied his shoestrings, He tied the knot, and He tied his shoes. He notes: "The act of tying things can lead to fastening things, and so an extension of the verb tie to uses proper to a verb like fasten or secure has occurred." In the sentence He tied his shoes, "the verb tie continues to describe the original activity, but it has been extended to take in the results of such activity." To paraphrase, in tying shoestrings, one produces a knot, which serves to fasten the shoes to the feet. There are two ways in which the "extension" to shoes can be accounted for. First, we can say that tie has acquired a new meaning; it has become a polysemic verb. Second, we can say that tie remains the same in meaning, but that since its context is appropriate to a verb like fasten, the context leads us to infer that a fastening has taken place. What makes this inference possible is that fastening is a natural consequence of tying; in linguistic terms, the meanings of tie and fasten are in a METONYMIC relationship.

Kick illustrates the same metonymic process. There are two distinct syntactic patterns for kick--although not two distinct verbs, or even one word with two meanings. One pattern is that of (A) (foot* is a cover term for all the instruments, PP* for one or more prepositional phrases; the double parentheses mean that only one of the two possibilities occurs):

- (A) i. Foot* kick (Adj) (PP*)
 ii. X kick ((X-foot*)) (Adj) (PP*) ((with X-foot*))

The difference between the two double-parenthesized possibilities is that when foot* is the direct object, it is viewed as "the thing moved" rather than an instrument; all the force in his leg (30) is unlikely as a direct object.

The other pattern is that of (B) (Adj is possible, although I have no data for it, or for the PP in (i)):

- (B) i. Foot* kick Y (Adj) (PP-part of Y)
 ii. X kick Y (Adj) (PP-part of Y) (with X-foot*)

The (i) and (ii) variants are parallel in (A) and (B), but only in (A) are they intransitive versus transitive; additionally, in (A) the (ii) variant can be either transitive or intransitive.

Pattern (A) is the basic pattern. The context is one appropriate for a "movement" verb; kick is a specific kind of movement. Pattern (B) has a context appropriate for a "contact" verb like hit. Our experience as human beings tells us that movements often lead to contacts; in fact, the against-PP option in (A) indicates that contact can be the conclusion of a movement. The relationship of movement to contact is metonymic. Kick can, by a metonymic syntactic shift, take on the context of a verb like hit. Conversely, hit (or strike) can shift metonymically in the opposite direction, and take on the con-

text of a verb indicating movement before the contact; this accounts for such constructions as hit against Y or strike out at Y. Kick retains the same meaning in Pattern (B); the sense of contact comes from the adjuncts, not the verb itself. In a basic pattern such as (A), the verb and adjuncts redundantly convey identical meanings; it is this redundancy which is lost in a shifted pattern such as (B).⁴

There is another context for kick, one which may appear to be simply an extension of (B), but which I will call Pattern (C), illustrated in sentences (72-100):

- (C) i. Foot* kick Y (Adj) (PP*)
 ii. X kick Y (Adj) (PP*) (with X-foot*)

The context is again one appropriate for a movement verb--another metonymic shift. Not only can a movement lead to a contact; the contact can lead to a further movement, as in (D):

- (D) Movement₁ → Contact → Movement₂

A verb that fits a contact-context may be metonymically shifted to represent an ensuing movement-context. This shift includes not only those verbs like hit that are inherently contact verbs (resulting in hit the ball to the outfield), but also verbs like kick that have been shifted once already. Schematically, hit and kick compare as in (E), with shifted contexts in brackets:

- (E) hit: ['move'] 'contact' ['move']
kick: 'move' ['contact'] ['move']

In this second movement, obviously, foot* doesn't move, but rather something affected by the contact. It may seem obvious that if X kicks Y to Z, then we can infer that X kicks Y. While this is often the case, it does not necessarily follow, as in (86, 93). In addition, there are two subsets of data for which the inference cannot hold because of real world limitations. In the first subset, the direct object names an object that covers X's body or legs. In (101-04), where the covering is a sheet or blanket, the inference can still hold. 'Off body' is assumed in (101), with lexical specifications of off body in (102) and off legs in (103-04). But in (105-11), the direct object names a piece of clothing, and the inference cannot hold unless there are some strange body contortions; off 'foot' is assumed in (105-06), 'of feet' in (107), and off 'body' in (108), with lexical specifications of from shoes in (109-10), of feet in (111), and off feet in (112). An attempt to characterize this subset runs into a problem already noted: even if shoes and the mud on the shoes (109) can be connected to feet in a semantic notation, how can that notation indicate that it is impossible to kick shorts (108) when one is wearing them?

The second subset of data has a reflexive as the direct object (113-15); the inference obviously fails here too. This reflexive can be omitted, as in (116-25). There are thus two quite different situations in which an intransitive is really a pseudo-intransitive, an elliptical form of a transitive: Pattern (A) transitives which omit foot* and Pattern (C) transitives which omit a reflexive.

With the interpretation that I have proposed here, the distinction of intransitive and transitive is more complex than usually assumed, and in fact is a poor analytic criterion. I am claiming that instead of kick being polysemic, as is the usual treatment, the syntactic possibilities of kick reflect two distinct context-types, with one type duplicated in two different patterns, resulting in three distinct patterns. Implicit in my analysis is the further claim that this syntactic complexity is not unique with kick; metonymic shifts may be widespread throughout the lexicon, making it difficult to account for all the contexts of a word with one general statement. When we analyze such situations we usually assume that a verb must have a meaning fully appropriate to the context, and this leads to the judgment that a word like kick is polysemic.

There is even more syntactic complexity. First, there is a subset of data (126-31) where adjuncts indicate not movement but destruction of the entity named by the direct object, such as He kicked apart his dormitory bed (126). It may be possible to generalize these data with Pattern (C), since change of place and change of existence are often treated in parallel fashion by a single verb: turn into the driveway, turn into a spoiled brat.

Second, there is a subset of data in which the direct object is a "result": hole (132), cloud of dust (133), haze (134), double-step (135), cancan (136), and way (137-39). (Note subject legs in (135).) This result is similar to knot in He tied the knot. The type of object noted earlier for Pattern (B) is an AFFECTED OBJECT (AFFECTUM); the type in (132-36) is an EFFECTED OBJECT (EFFECTUM). Effected objects are quite widespread in the language: almost every verb can take an object like way; a "destruction" verb can have an object like hole, a "performance" verb an object like cancan, and a "creation" verb a wide range of such objects. The relationship of affected object to effected object is also a metonymic one; this can then be a fourth pattern with the adjuncts being those appropriate to a creation verb like make.

With this analysis of literal kick, we can go on to analyze figurative kick, and then compare kick to a kindred verb such as slap. But such ambitions require at least one more article. I suspect that we will probably have to be kicking kick around for a very long time.

FOOTNOTES

¹I adopt Jackendoff's (1973) view that words like in, on, out, off, which are called particles or adverbs when they are not followed by an object, should be considered intransitive prepositions. I also assume with him that backward and forward are intransitive prepositions too. However, I simplify his view in one respect. His PP rule is $PP \rightarrow P (NP) (PP)$, which allows the possibility that a sequence of two prepositions can be either two PP's or a second PP embedded in the first. Since the difference is not crucial to my discussion here, I assume that only the first possibility occurs.

²I adopt some of the terminology of Case Grammar here, but by putting such terminology initially in double quotes I mean to indicate that I use it merely for the purpose of discussion, not as technical terminology. Also, in my discussion of adjuncts, I omit any reference to adjuncts of manner or purpose, and to the expression kick back, where back 'in response'. These adjuncts are more tangential syntactically, and do not alter any of the proposals I make.

³In (32), the instrumental phrase occurs before the target phrase, reflecting the freedom of order of some prepositional phrases. Similarly, a direct object and an intransitive preposition can vary in order (cf 42 and 43)--the transformational "Particle Shift." These variant orders have no bearing on the points at issue here, and so I adopt the simplification of putting the instrumental phrase last and the direct object first in any generalizations I make.

⁴Fillmore (1971,386) cites the contrast He smeared mud on the fender and He smeared the fender with mud, noting that the first is the "original" meaning, with the second shifted to a context appropriate for cover. The same contrast appears in He kicked his foot against the brick and He kicked the brick with his foot, the first basic (A) and the second shifted to a hit context (B). A similar contrast discussed frequently in the literature is He loaded hay on the wagon and He loaded the wagon with hay, the second shifted to the context of fill.

BIBLIOGRAPHY

- Fillmore, Charles (1971), "Types of lexical information," *Semantics: An Interdisciplinary Reader in Philosophy, Linguistics, and Psychology*, ed. Danny D. Steinberg and Leon A. Jakobovits. Cambridge University Press.
- Jackendoff, Ray (1973), "The base rules for prepositional phrases," *A Festschrift for Morris Hale*, ed. Stephen Anderson and Paul Kiparsky. New York: Holt, Rinehart, and Winston.

1. You have to kick rapidly when using a crawl stroke. (Random House Dictionary)
2. He kicked the door again, louder. (Richard G. Brown)
3. . . .a few young men went over to admire its fittings and kick its front tires. (Tom Wicker)
4. . . .they were standing around the back door, kicking the steps. (Flannery O'Connor)
5. Tillotson drew back his right boot, then drove it forward, kicking Gideon's temple. (John Jakes)
6. "Not even a plum seed," said Virgil, kicking the grass. (Eudora Welty)
7. Maybe she wrote another one, he thought, and kicked some sand. (Norman Mailer)
8. . . .he began to hit and splash and kick the filthy river. (Flannery O'Connor)
9. She kicked the air. . . . (Kimon Lolos)
10. A soft body came in contact with his toe. He kicked out viciously, and the room was full of yelping. (Edith Wharton)
11. Some of the material he had discovered, while kicking among the ashes. . . . (Philip Roth)
12. Haskel kicked through the remains of the bonfire. (Jerry Bumpus)
13. He got one leg loose and kicked at Pete, hitting him in the stomach. (Donald Honig)
14. Suddenly I let go of my knees and kicked powerfully toward the ropes. (Stanley Elkin)
15. He turned around on his hands and knees and lowered himself backward off the roof, kicking blindly for a foothold on the window frame. (George Cuomo)
16. Soon the young men were in a frenzy, leaping and slapping the ground, clapping their hands, then springing and kicking into the air like acrobats. (Henry Bromell)
17. Someone kicked against the chair across the table. . . . (Hunter Kay)
18. . . .Pa suddenly kicked out at the row of pokers. . . . (Donald Honig)
19. I started kicking around in the snow. (W. H. Gass)
20. Gardener kicked down savagely at his face. (Ngaio Marsh)
21. I took a breath and drove my head into the cold, kicking down and against the current that swept me back. (Hunter Kay)
22. The eyepatch man had kicked Harvey Beecher in the rump. (Jerome Charyn)
23. One student rises, marches to the front, kicks each of them firmly on their behinds. (Geoffrey Stokes)
24. . . .[he] kicked the conductor at the shins. (Paul Horgan)
25. He kicked the robber between the legs. . . . (John Jakes)
26. His feet lifted from the river bottom, and he rolled onto his back, kicking weakly with his tired legs. (Craig Thomas)
27. . . .then, kicking with his knee and forcing his antagonist's head down with his hands, he loosened the grip on his waist. . . . (H. G. Wells)

28. The kid kicked out with his left leg. . . (Bob Ottum)
29. She kicked at the dirt with a bare foot, sending a spray of it in front of her. (George W. Cornell)
30. . . .he had kicked at Yussie's face with all the force in his leg. (Henry Roth)
31. She kicked at it with the toe of a high-heeled slipper. (John P. Marquand)
32. . . .I spin on my left foot and kick backward with my right for the nerve complex. . . . (Frederick Busch)
33. The wrestler faked with his fist and kicked Gunner's hand with his foot. (William Talsman)
34. Disgusted, the actor kicked the other character with his boot. (Phil Roura and Tom Poster)
35. . . .[he] kicked her buttocks with the instep of his foot. . . . (Peter Matthiessen)
36. He sat in the middle of the sofa, kicking it with his heels. (Flannery O'Connor)
37. He stopped once to get his breath and then began again, kicking the door frenziedly with the blunt toe of his heavy work shoe. (Flannery O'Connor)
38. . . .Tom Ruffin kicked the horse with his bare feet. (John Jakes)
39. . . .he wasn't kicking his feet, stroking his arms. (Wayson S. Choy)
40. It [=horse] scampered up the rise with the others, kicking its heels and snorting. (John Sayles)
41. . . .he tossed his head, kicked his front and back legs. (William L. Franklin)
42. He kicked his feet back and pulled himself forward so that the rope went out higher and wider. (Margaret Gibson)
43. . . .kickin' out my toes. . . . (John Dos Passos)
44. The little boy kicked his feet against the underside of the dashboard. (Toni Morrison)
45. . . .he kicked his toes against his heels to stir the blood in his numbed and sodden feet. (Neil Bell)
46. He began to kick his tan boots with brass eyelets against the back of the next pew. . . . (Bernard Malamud)
47. . . .he was shouting with the others and kicking his heel violently against the rung of his chair. (George Orwell)
48. Haze turned suddenly and kicked his foot into the front tire. (Flannery O'Connor)
49. Morose, he trailed along behind, kicking his toes into the cracks between the [marble tiling] squares. . . . (Nancy Hale)
50. . . .[she] kicked her heels into her horse's sides to keep it running. (Cecelia Holland)
51. . . .kicking his boot into the dog's rear. (Thomas Sanchez)
52. ". . .he laughs hard and kicks his thin legs into the air. . . ." (Leon Rooke)
53. She stepped forward, stepped back, and kicked one leg across the other, her arms extended. (Cecelia Holland)
54. . . .a donkey named Nancy, kicking her heels at a yapping dog. (Joseph Judge)

55. She kicked her foot over the furrow. (Eudora Welty)
56. They kicked their feet through the dying but raucous leaves. (Daphne Athas)
57. She took two or three slow steps in one direction with her knees bent and then she came back and kicked her leg slowly and painfully in the other. (Flannery O'Connor)
58. . . .causing one of the younger men to lie down on his back and kick his legs up in the air for joy. (Peter Matthiessen)
59. The child began to scramble up the steps on his hands and knees, kicking his feet up on each one. (Flannery O'Connor)
60. . . .[she] threw her arms around him, kicking one leg back in the air. . . . (Dan Wakefield)
61. He kicked his foot backwards on the can and a hollow boom reverberated in the alley. (Flannery O'Connor)
62. . . .Jenny shied away, kicking her heels high. (Richard Wright)
63. . . .the male stood kicking his front feet high in the air. (William L. Franklin)
64. . . .[he] proceeded to kick an imaginary foot deep into my crotch. (Norman Mailer)
65. The boy ran in the air, legs kicking. (Joyce Carol Oates)
66. The cat's legs kicked and reached but Paul's hands were behind its head. (Andre Dubus)
67. . . .his hands tied behind him and one leg kicking out. . . . (Donald Honig)
68. His foot kicked out and struck the leg of the other's chair. (Ellery Queen)
69. . . .Tosca's red-satin high heel kicked in the empty air. (William O'Rourke)
70. His boots kicked and fists smashed and tore on the bark. (Michael Rothschild)
71. He kept watching his foot kick the suitcase. (Flannery O'Connor)
72. . . .I found her muttering and kicking an empty carton about fiercely. (Ann Copeland)
73. . . .he had to keep kicking the ball around. . . . (E. B. White)
74. At the entrance he kicked aside an empty beer can. . . . (Norman Mailer)
75. It was easy to imagine the police vice squad kicking in a door. . . . (Patrick F. McManus)
76. The magpie walked the fence, kicking off snow. . . . (Max Schott)
77. Larry moved his hands to the handlebars and kicked up the kickstand. (Andre Dubus)
78. Josh kicked it [a knife] at Emmet. (Jay Neugeboren)
79. He kicked a few scoops of dirt against the long body. . . . (Paul Horgan)
80. . . .kicking stones down the slope. . . . (Kaatje Hurlbut)
81. . . .she moved quicker and kicked the knife under the table. (V. C. Andrews)
82. She kicked loose dirt on the snake. (Paul Horgan)

83. He kicked a piece of wood in the fire. . . (Kent Nelson)
84. I kicked a stone into the river. . . (Wayson S. Choy)
85. Psin kicked his horse into a faster trot. (Cecelia Holland)
86. . . .men compared a softball play to Eddie Stanky's kicking the ball out of Phil Rizzuto's glove in the 1951 World Series. (George Vecsey)
87. He went back to the other burning magazines and kicked them away from the wall. . . (Frederick Busch)
88. He finished buttoning his shirt, kicked the chair back into place. . . (Norman Mailer)
89. Abruptly Tshant kicked his horse forward toward the cattle herd. (Cecelia Holland)
90. He caught up with her and kicked her over onto her back. (Cecelia Holland)
91. . . .kicking her cosmetic case ahead of her across the marble floor. . . (Charles Newman)
92. . . .she kicked open the baggy screen door. (Daphne Atlas)
93. He kicked a stone loose. (Margaret Gibson)
94. The dun horse swerved violently, and Psin kicked him straight. (Cecelia Holland)
95. Stiffly, they dismounted, kicked their donkeys free to find their own shade. . . (James A. Michener)
96. The Abbott kicked a stone clear of the path. (Brian Moore)
97. If I found the bottle I'd kick it deep under the snow. (W. H. Gass)
98. . . .he kicked the top board up with his foot. . . (Wilson Lucas)
99. She tripped over the basket of flowers and kicked it out of the way with her bare feet. (Kermit Frazier)
100. Halleck kicked the door shut with one heel. (Frank Herbert)
101. . . .I kicked the sheet straight up. . . (William Hoffman)
102. Abel kicked the sweat-wet sheet off his body. . . (William J. Craddock)
103. He kicked the blanket off his legs. (Robert Penn Warren)
104. Granma kicked the curtain off her legs. . . (John Steinbeck)
105. Jared kicked off his shoes. . . (John Jakes)
106. One of the crew had kicked off his boots. . . (Barbara Rieff)
107. . . .kicking the skis free. . . (Ernest Hemingway)
108. . . .he kicked off his shorts angrily. (Tabitha King)
109. . . .stamping his feet, kicking the mud from his shoes. . . (Terry Southern)
110. . . .they kick the snow from their shoes on a wooden platform. (John J. Putman)
111. She kicked her shoes free of her feet. (Francis Irby Gwaltney)
112. . . .[she] kicks the shoes off her swollen feet. . . (Joan Colebrook)

113. . . .he kicked himself backward and away. (Peter Matthiessen)
114. They ran aft and kicked themselves free off the screw. . .
(Richard McKenna)
115. On his back he kicked himself under the bed. (William Hoffman)
116. Together they started the long swim to the bank. Ben kicked along on his back, resting, recouping his wind.
(Raboo Rodgers)
117. . . .face partners and kick up to a handstand. (Charles A. Pease)
118. . . .staying under, swimming until his chest ached, then kicking up to take air. . . (Edward Hannibal)
119. Then I perceived Buliwyf kicking down into the depths of the sea. (Michael Crichton)
120. Lear pulled himself along by handholds, kicked off from walls. . . (Larry Niven)
121. Up the stairs Momma stumbled, clasping Cindy, who was still trying to kick free. (V. C. Andrews)
122. . . .the creature wheeled toward him a rage. Colin neatly kicked out of its way. . . (Arnold Federbush)
123. Rabbit kicks out of the bedcovers and hunts in the dark for his clothes. (John Updike)
124. I kicked free of my tangled trousers and shorts. (William Hjortsberg)
125. With 330 yards to go, Baker kicked into his final sprint.
(William J. Buchanan)
126. He kicked apart his dormitory bed. . . (Jack Ludwig)
127. ". . .you stay here and kick the fire out," said Oscar.
(Paul Horgan)
128. . . .he's got on boots gray and dusty and heavy enough to kick a man half in two. (Ken Kesey)
129. . . .kick a boulder into a thousand glittering shards.
(Ron Faust)
130. Psin kicked three fires to pieces. (Cecelia Holland)
131. . . .Vespasiano Gonzaga kicked his only son to death. . .
(Aldous Huxley)
132. . . .[he] kicked a hole in the slush. . . (Michael Rothschild)
133. The riders came on their horses kicking up a cloud of dust.
(W. C. Tuttle)
134. A horse going by used to kick up a sweet-smelling, stifling little haze. (Paul Horgan)
135. The two lines [of dancers] shimmer forward, legs kicking out an emphatic double-step. . . (David M. Schwartz)
136. . . .the great gleaming hams of a line of ponderous danseuses kicking up a cancan that could/would go on interminably. (Jerry Bumpus)
137. One sees a man swimming or flying it may be, stretched out belly-down and furiously kicking his way along the wall at about shoulder level. (Alexander Eliot)

138. Then he flung outward, feet first, with a
swish
Kicking his way down through the
air to the ground.
(Robert Frost)
139. She is tall, quite young, and was probably once one of those
long-legged beauties in cowboy hats who kick their way
through southwestern football. (Nancy Chaikin)

ON THE USE OF POSTMODIFICATION IN ENGLISH NOUN PHRASES

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It is a well-known fact that the head in an English noun phrase can be followed by one or more postmodifiers, selected from a number of different types, such as relative clauses, participles, infinitives, prepositional phrases, and so on. There may furthermore be an unlimited number of levels of postmodification within the noun phrase, since a postmodifier may contain another noun phrase with its own postmodifiers, and so on. An example of this is

(1) rather a pressure [on the books [[in the library]]]

A noun phrase of this type which does not occur within the postmodifier of another noun phrase I will call a first-level noun phrase; its head is here marked with a single underscore. A postmodifier of a first-level noun phrase will be said to be on the first level of postmodification; the beginning and end of this postmodifier are marked with single square brackets. A noun phrase that occurs within a first-level postmodifier will be called a second-level noun phrase. Its head is marked with a double underscore, and it may be followed by a postmodifier on the second level of postmodification, which is enclosed in double square brackets, and so on. The number of the deepest level of postmodification in a noun phrase will be called the maximum depth of postmodification of that noun phrase.

The system of the language thus permits infinitely long and infinitely complex noun phrases. What I wanted to find out, when I started this investigation, was to what extent speakers and writers of different types of text actually make use of the possibilities provided by the system.

For this purpose I excerpted all the noun phrases from a number of text extracts with a total length of some 44,000 words. My material came from two sources: A Corpus of English Conversation (Svartvik and Quirk 1979), and the Lancaster-Oslo/Bergen Corpus of British English (LOB). A Corpus of English Conversation is an edition of surreptitiously recorded dialogues; the recordings were made as part of the Survey of English Usage carried out by Randolph Quirk and his associates

at University College, London, in the 1960's. The corpus consists of some 25 text samples of 5,000 words each; the speakers are mainly teachers, secretaries, and students at University College, London. From this corpus I selected four texts, which means that my spoken material totals 20,000 words.

LOB was compiled in the 1970's from sources printed in 1961 as a parallel to the Brown University Corpus of Present-Day American English. Thus it is made up of 500 text samples of 2,000 words each, divided into 15 text categories such as Press: Journalism, Press: Editorial, Belles Lettres, Learned and Scientific Writing, Fiction: General, Fiction: Adventure and Western, Fiction: Romance and Love Story, and so on. From this corpus I selected randomly a sequence of three text samples from each of the following categories: B (Press: Editorial), G (Belles Lettres), J (Learned and Scientific Writing), and N (Adventure and Western)¹. The categories were chosen so as to range from informal conversation over informal writing in N to the more formal kinds of writing in B, G, and J.

My original plan was to investigate a parallel set of text samples from the Brown Corpus as well. For various reasons I was unable to do that, so this paper will be concerned only with spoken and written British English.

From my text material I excerpted 9,845 first-level noun phrases, which I analyzed in terms of use of post-modifiers, depth of postmodification, and type of post-modifier used. These noun phrases were very unevenly distributed over the different text categories, as shown in table 1. The S category (i.e. the spoken

Category	NP	NP(PM)	
S	5,359 (1,608)	507 (152)	9.46%
N	1,379	251	17.97%
G	1,209	283	23.41%
B	990	308	31.11%
J	890	361	40.56%
Total	9,845	1,710	

Table 1. Frequency of occurrence of first-level noun phrases.

material) contributes more than half of the noun phrases found. It should be remembered, however, that S consists of 20,000 words, whereas the other categories have only 6,000 words each. A figure for S that is comparable to those for the other categories is given

in brackets in the table. The categories are ranked according to the number of noun phrases found in them; this ranking order will be retained in all the figures and diagrams below in order to facilitate comparisons. The ranking order clearly agrees well with the degree of formality of the language in the texts: the highest number of noun phrases is found in the informal dialogues in S, and the lowest number in the most formal type of writing in J.

Not all the noun phrases found contained postmodifiers. The number of those that did is given in the second column of table 1, NP(PM). The ranking order turns out to be reversed here: J, which has the lowest number of noun phrases, has the highest number of postmodified noun phrases, whereas S, which has the highest number of noun phrases, has the lowest number of postmodified noun phrases (i.e. per 6,000 words, as shown in brackets in the table). Thus the percentage figures for postmodified noun phrases form a rising scale from S to J, as shown in the third column of table 1. This rising scale is also illustrated graphically in figure 1.

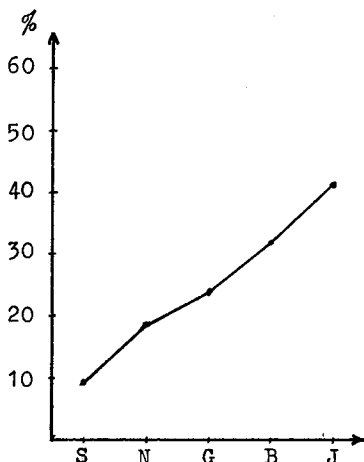


Figure 1. Relative frequency of NP(PM).

The maximum depth of postmodification of each noun phrase was determined; the number of noun phrases in each category with a given maximum depth of postmodification is shown in table 2.

Two different average values for depth of postmodification were calculated: D_0 is the average depth of postmodification for all the first-level noun phrases found (i.e. including those with a depth of zero), whereas D_1 is the average depth of postmodification for those noun phrases which actually have postmodifiers (i.e. which have a maximum depth of 1 upwards).

Depth:		0	1	2	3	4	5	6	D_0	D_1
S	4,852	429	68	7	3				0.111	1.18
N	1,146	212	31	6	2				0.213	1.20
G	926	198	64	16	4			1	0.328	1.40
B	682	197	81	22	2				0.443	1.43
J	529	228	88	37	6	2			0.617	1.52

Table 2. Number of noun phrases with a given maximum depth of postmodification.

The values for both D_0 and D_1 form rising scales, as shown in figures 2 and 3, which are similar to that for the frequency of occurrence of postmodified noun phrases in figure 1. In other words, the more postmodified noun phrases a text contains, the more complex will they be.

I think it is possible, if not to explain, at least to comment on these results in pragmatic and textual terms. In the spoken texts, the great majority of noun phrases are exophoric: they can refer to the participants in the speech situation - I, you, we - or they can be premodified by deictic pronouns, as in this one, that one. This type of noun phrase occurs to a certain extent in the N texts as well, since these contain a certain amount of dialogue, but they are very rare in the other categories (although endophoric pronouns can be found there). This factor will thus contribute to the low frequency of occurrence of postmodified noun phrases in S.

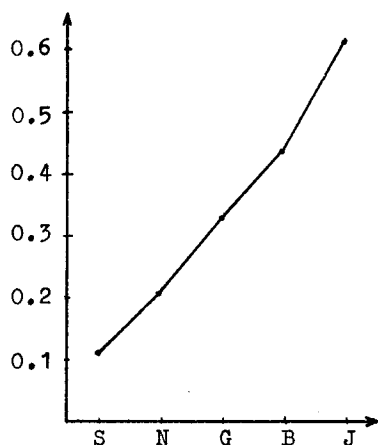


Figure 2. Average depth of postmodification in all noun phrases (D_0).



Figure 3. Average depth of postmodification in postmodified noun phrases (D_1).

Another factor that should be taken into consideration here is the number of propositions per sentence which a speaker/writer is prepared to encode, and which a hearer/reader can be expected to cope with in decoding the sentence. An increase in the number of postmodified noun phrases in a text, and in the depth of postmodification in each noun phrase, will increase the effort required to encode and decode the sentence. It seems reasonable to assume that the effort which the speaker/writer is prepared to make, and which he may judge reasonable to demand from the hearer/reader, varies with the formality and purpose of the text. In the relaxed, informal conversations between colleagues and friends in the S texts, the primary intention of the speakers very often does not seem to be to convey information, but just to keep the conversation going. The effort level will therefore be quite low, which means that both the number of postmodified noun phrases, and the depth of postmodification, can be expected to be low, too. In the J texts, at the other end of the scale, the purpose of the authors is primarily to convey information, which means that they are prepared to use more postmodified noun phrases, and greater depth of postmodification, in order to express more propositions per sentence.

It is worth noting here that one of the S texts is not a recording of a conversation between equals, but of a discussion between a teacher and some students about various problems at the college. The situation is thus slightly more formal, and both the number of postmodified noun phrases, and the depth of postmodification, are somewhat higher here than in the other S texts.

This seems to indicate that the frequency of occurrence of postmodified noun phrases, and the average depth of postmodification, can be used as style markers in a quantitative stylistic analysis of texts.

All the major types of postmodifier listed in Quirk et al. 1972:860-901, and a few minor ones, were found in my material. Only one example of each can be given here:

- (2) the habits [of the people] (prepositional phrase)
- (3) the only subject [I wanted to do] (restrictive relative clause)
- (4) the summer school [which crops up just once a year] (non-restrictive relative clause)
- (5) the truism [that policies [of menace and mutual disarmament] cannot be followed together] (appositive clause)

- (6) more tutorials [than you can prepare for]
(comparative clause)
- (7) this attempt [to elicit contraceptive histories]
(infinitive)
- (8) those [seeking to avoid the publicity] [of a London hearing]] (present participle)
- (9) a paradigm indicator [associated with each stem]
(past participle)
- (10) something [equally fatal] (adjective)
- (11) the secretary [upstairs] (adverb)
- (12) the place [itself] (reflexive)

Nine out of these eleven types occurred only marginally, however, with frequency figures usually below 5%. Some of them did not occur in all texts, or even all text categories: reflexives, for example, occurred only four times in the entire material, twice in S and twice in G.

The two most frequent postmodifiers in all the texts were prepositional phrases and restrictive relative clauses. Of these, the prepositional phrase was more frequent in all the texts, but the proportion between the two varied over the ranking scale, with more prepositional phrases and fewer restrictive relative clauses at the more formal end, and the other way round at the informal end of the scale, as shown in figures 4 and 5. This difference may be due to an urge for greater explicitness in the less formal styles, and an urge for compression, at the expense of explicitness, in the more formal styles.

It is only in category B that the rise of the line for first-level prepositional phrases (in figure 4) is broken; for the other lines the difference between B and G is so small as to be negligible. Thus the frequency of occurrence of prepositional phrases and restrictive relative clauses, especially if all levels of postmodification are taken into consideration, seems to be a good style marker, too. If we want to work with a single figure for each category, we can use the ratio $\frac{p}{r}$, where p is the number of prepositional phrases, and r is the number of restrictive relative clauses, as shown in table 3.

As regards pronouns in relative clauses, I will confine myself to a comment on the use of relative pronouns in non-subject position in restrictive relative clauses with non-personal antecedents. Here the system of the language offers a three-ways choice between which, that, and zero pronoun. In British English, other things being equal, zero is favored in informal language and which in formal language (Quirk

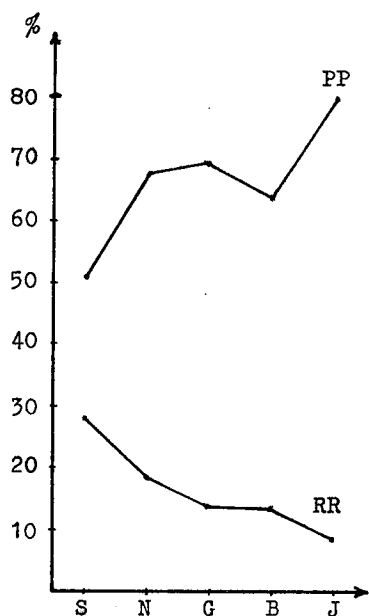


Figure 4. The use of prepositional phrases and restrictive relative clauses in first-level postmodifiers.

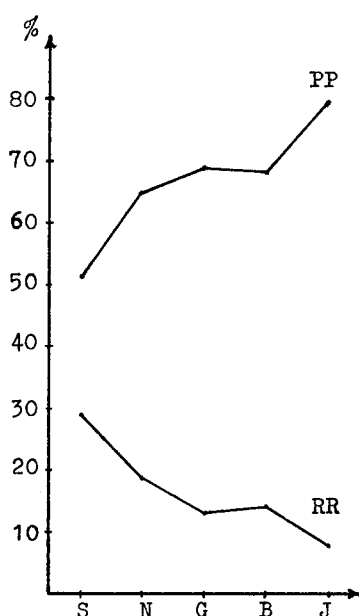


Figure 5. The use of prepositional phrases and restrictive relative clauses at all levels of postmodification.

		S	N	G	B	J
First level	p	282	183	209	213	317
	r	151	51	43	49	34
	$\frac{p}{r}$	1.87	3.59	4.86	4.35	9.32
All levels	p	333	223	294	324	482
	r	186	62	58	70	46
	$\frac{p}{r}$	1.79	3.60	5.07	4.63	10.48

Table 3. The ratio $\frac{p}{r}$ in all categories.

et al. 1972:869-71). In my material, which certainly behaves in this way, as is shown in figure 6: it is increasingly more common in the more formal text types. Like the previous variable, however, this one seems to suggest that there is really no great stylistic difference between the categories B and G.

The choice of relative pronoun is not governed entirely by stylistic considerations; certain syntactic

factors can also favor the selection of a particular variant. For example, if the subject in the relative clause is a pronoun, then zero is normally selected (Quirk et al. 1972:871). This accounts for all but two of the zeros in my material; we can, however, find both which and that in this kind of relative clause, as in examples (13) and (14).

(13) a thing [that he had tried to forget]

(14) the violence [which he tried to prevent]

If we exclude all those examples where the selection of relative pronoun can be said to have been influenced by syntactic rather than stylistic factors (cf. Quirk et al. 1972: 869-71), we will still get a graph for which that is similar to the one in figure 6 (with the exception that the value for G is higher than the value for B, yet another indication that these two categories do not differ greatly from a stylistic point of view). This seems to indicate that the frequency of occurrence of which in this clause type is, after all, a useful style marker. As regards the zero pronoun, I think all we can say is that the more informal styles, because of their greater use of personal pronouns as subjects, favor the use of those syntactic constructions which, in their turn, favor the use of the zero pronoun.

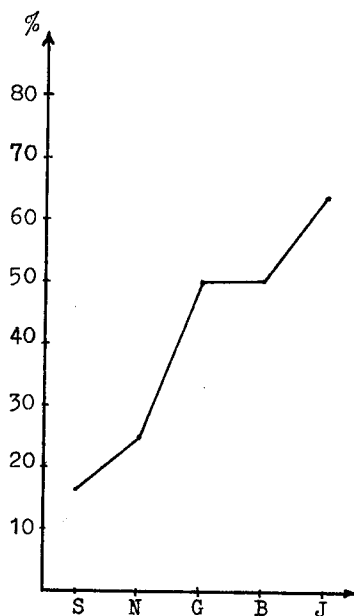


Figure 6. The use of which in non-subject position in restrictive relative clauses.

As we have seen, the use of postmodifiers in English noun phrases is to a great extent related to the stylistic level of the text. In an informal text we find fewer and less complex postmodifiers than in a more formal text; likewise, in such texts we find more restrictive relative clauses in relation to prepositional phrases, and we find fewer examples with which in non-subject position in restrictive relative clauses with non-personal antecedents. It is my belief that an analysis of texts from relatively well-defined text categories of the type used here can help us to set up some kind of standard with which the results of analyses of other texts can be compared in order to determine their place on a stylistic scale defined in terms of relevant properties of noun phrase postmodifiers.

Footnote:

¹The texts examined have the following identification numbers:

In Svartvik and Quirk 1979: S.1.4, S.1.5, S.1.8, and S.3.3.

In LOB: B01-03, G31-33, J31-33, and N25-27.

References:

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. 1972. *A Grammar of Contemporary English*. London: Longman.

Svartvik, Jan and Randolph Quirk. 1979. *A Corpus of English Conversation*. Lund: Gleerups/Liber.

A SYSTEMIC-FUNCTIONAL MODEL FOR OLD ENGLISH

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Systemic linguistics offers a multistratal approach to the systems and structures of language. The structures of lexico-grammar are the output of systems in the same stratum; but these systems are predetermined in various ways by systems in a higher stratum, and ultimately by components of a social semiotic. In this paper I wish to outline this theory as it focuses on the structure of the nominal group in modern English. The problem which I propose is the extension of the theory into historical linguistics, particularly as the theory would focus on the structure of the nominal group in Old English. One form of solution to this problem is a typology of Old English nominal group structures, based on the systemic concept of functionally labelled constituency elements.

In systemic theory, linguistic organization falls into three strata: the semantic, the lexico-grammatical and the phonological/graphological. Each of these strata is realized by the next; but the semantic is in a different sense the realization of a semiotic stratum which mediates social reality to the systems of language. Each of the three linguistic strata can be described paradigmatically, that is, as a set of options which relate to one another as alternatives or as higher generalizations. Such options are viewed in system networks which display those options and their relationships which are contingent on some particular environmental condition (Halliday 1973: 55-58; 1978: 111-112, 128, 189).

Social reality can only be encountered as a system of meanings. This social system is therefore a semiotic. Language is one means of interpreting and communicating the meanings which constitute this semiotic, though not of course the only means. The semiotic stratum may be viewed as a collection of "social contexts" (Halliday 1978: 189), each of which is a crystallization of meanings from the full meaning potential of the stratum. Any particular social context exhibits a structure of action, a structure of social roles, and a status belonging to text itself. These three components of the social context are its "field", "tenor" and "mode". Realization of the social context linguistically in the semantic stratum reveals that semantic systems cluster in patterns related to field, tenor and mode. Field of action is realized semantically by systems which relate to the "ideational" function of language. Tenor of social role is

realized by systems which relate to the "interpersonal" function. Mode of text is realized by systems relating to the "textual" function (Halliday 1973: 63-64, 79-80; 1978: 109-110, 122-123, 142-145, 187-189; 1979: 61-63).

In turn, these three governing functions, or "metafunctions", in the semantic stratum determine structures and systems in the lexico-grammatical stratum. Systems in this stratum also cluster in patterns related to the three metafunctions, and through them to the corresponding components of the social context. Furthermore, choices in semantic systems constrain choices in related lexico-grammatical systems (Halliday 1973: 75, 93-94; 1978: 113).

Structure in the lexico-grammatical stratum is related to the metafunctions severally. Each of the metafunctions is encoded at each rank in lexico-grammar according to a different general pattern. The experiential component of the ideational metafunction is typically encoded in a constituency structure of discreet elements, functionally labelled and hierarchically related. But interpersonal meanings are encoded in prosodic structures, and textual meanings in periodic structures. In turn, these different structural patterns are mapped onto one another to produce the familiar sequence structures of ordered elements (Halliday 1973: 95; 1978: 128-130, 188; 1979: 63-73).¹ Strata and their components are outlined in the following diagram:

	STRATA	COMPONENTS
↓ Axis of Realization ↓ V	Semiotic	Social Contexts { Field Tenor Mode
	Semantic	Systems, Structures, Metafunctions { Ideational Interpersonal Textual
	Lexico-grammatical	Systems, Structures { Constituent Prosodic Periodic
	Phonological/Graphological	Systems, Structures

One method for extending this theory into the realm of diachronic linguistics is to assume that any historical dialect implies semiotic and linguistic strata parallel to those of contemporary dialect. Such strata can also be assumed to have parallel functional, systemic and structural components. A diachronic linguistics is then the description of such components at two or more places on a time line, together with an orderly account of changes which have overtaken one set of components in order to produce their later parallels. Here I will limit the discussion to the metafunctions and constituent structures at the rank of group in Old and modern English.

The nominal group in modern English is a class of units defined by its syntax, or distribution at certain clause elements, mainly Subject and Complement, and by its peculiar morphology. It belongs to a rank scale consisting of four simple units, clause, group, word and morpheme, and their complexes. Nominal group complexes consist of one or more simple groups ordered paratactically or hypotactically (Berry 1975: 91-106). The basic constituent structure of the nominal group and its complex is determined by the ideational metafunction. The experiential component of this metafunction determines constituent elements which relate to the semantic categories of thing, class, quality, quantity, and so forth. These elements are labelled thing, classifier, epithet, numerative, deictic and qualifier. The logical component of the ideational metafunction determines the distinction between modifier and modified. These two different kinds of structure mapped onto one another typically produce a structure with *h(ead)* element as nucleus realizing category "thing", and all the other experiential elements as modifiers. The logical function also finds expression in the ordering of premodifier elements, which is part of the mapping, and realized as sequence. Atypical mapping includes realization of experiential categories other than "thing" at *h* element (Halliday and Hasan 1976: 39-41; Halliday 1979: 65).

Constituent elements in the nominal group are realized by classes of words. Typical realization includes nouns at *h* element, nouns at *c(lassifier)*, adjectives at *e(pithet)*, and so forth. Atypical realizations include a limited number of adjectives at *c*, or at *d(eictic)*. Rankshifts may also appear, and do so typically at *q(ualifier)* element, as prepositional groups and clauses realizing the semantic categories of relation and predication (Halliday and Hasan 1976: 40-41). The following diagram illustrating typical structure is quoted from Halliday and Hasan (1976: 40).

	the	two	high	stone	walls	along the roadside
logical	Premodifier				Head	Post-modifier
experiential	Deictic	Numerative	Epithet	Classifier	Thing	Qualifier
Classes	determiner	numeral	adjective	noun	noun	(prepositional group)

The application of this model to Old English must begin with the assumption that the two historical dialects in question have semantic and lexico-grammatical strata in parallel, at least to the point of having the same functional components in semantics, and the same classes of units in the lexico-grammar. The problem then is to discover what ideational categories in semantics relate to what constituent elements in Old English nominal group structure. A further problem is the assignment of word-class realizations to those elements of sequence structure which result from the mapping together of various constituency elements.

The traditional grammar of Old English, as exemplified in standard handbooks (eg., Mossé 1945, Quirk and Wrenn 1957, Mitchell 1971), tends to represent the nominal group only in terms of word class realizations, sequence structures and case marking. An example is the sequence *demonstrative + adjective + noun*, in which the demonstrative (*se*, "the/that" and *þes*, "this") and the adjective may be said to "define" the noun in question. It is indicated that the *demonstrative + adjective + noun* sequence is normative, but that other sequences are possible. It is also indicated that case concord is maintained throughout the sequence (Mossé 1945: 168; Quirk and Wrenn 1957: 74, 87-88). This form of traditional description catalogues a great number of sequences, without trying to relate sequences which are semantically connected, like *demonstrative + adjective + noun* and *possessive + adjective + noun*. Occasionally the semantic function of some particular element is described, as in the case of genitive modifiers (Quirk and Wrenn 1957: 61-63).

On the other hand, a systemic-functional model for the Old English nominal group will attempt to relate functional components of the semantic stratum to all aspects of group structure, and to relate together different lexico-grammatical structures which are semantically similar. The Old English nominal group, systemically conceived, is the unit of group rank which realizes Subject, Complement, and some other elements, and which has a distinctive morphology. It is therefore parallel in general terms to its modern English reflex. Like that reflex, it has

a modifier-modified structure determined by the logical component of the semantics. This structure is mapped together with a structure determined by the experiential component, this time consisting of elements labelled thing, nominal, epithet, determiner and qualifier. The output is a typical sequence structure consisting of *h(ead)* element, with optional premodifier elements *d(eterminer)*, *e(pithet)* and *n(ominal)* in that order, optional premodifier element *r(adverbial)*, and optional postmodifier element, termed *q(ualifier)*.

The typical word class which realizes both *h* element and *n* element is noun. The *e* element is typically realized by adjective. The *d* element is realized by three separate classes, deictic, quantifier and numeral. The *q* element is typically realized by rankshifted groups and clauses, but it very frequently admits realization by adjective and noun words. Rankshifted nominal groups also appear frequently at *n* element. Typical structure and its realization can be summarized as follows:

logical	Premodifier			Head	Post-modifier
experiential	Determiner	Epithet	Nominal	Thing	Qualifier
Classes	deictic, numeral, quantifier	adjective	noun	noun	(nominal groups, clauses)

Several important differences from the modern English nominal group are now apparent. Of course case inflections in the Old English group supplement word class and sequence as means of marking function overtly. That is, *d* and *e* elements, as well as some types of *q*, are apt to show case concord with the *h* element. The *n* element is usually distinguished by genitive or dative case, the same being true of noun-word and nominal-group realized *q* elements. But the *n* element itself is structurally and semantically different from its nearest modern English analogues. It occupies the same position in typical sequence as the modern English *c* element, but its wide range of functions associates it more closely with the semantic category of relation, which is realized in modern English by prepositional groups at *q* element. Partly for this reason, the Old English *q* is less than in modern English the domain of relation and predication exclusively; the high frequency of word unit realizations and rankshifted nominal group realizations at *q*, and the extreme low frequency of prepositional group realizations make it rather less distinctive both semantically and structurally than its modern English counterpart. Finally, the *d(eterminer)* element is allowed here to subsume the modern English elements *d(eictic)* and *n(umerative)* because in Old

English it is not so easy to see the separate elements realized by distinct places in sequence.

On these principles, a systemic typology for the Old English nominal group is now possible. In two previous papers (Cummings 1980, 1981) I have based a typology on nominal groups drawn from Old English homilies. The following limited typology rests on the traditional description of nominal group structures found in standard handbooks, principally those of Quirk and Wrenn (1957), Mitchell (1971) and Mossé (1945), supplemented by types drawn from Davis (1953), Brook (1962) and Ardern (1951).²

The *h* element is usually realized by a single word, drawn from the classes noun, pronoun, adjective or participle, and determiner -- the last subdivided among deictics, numerals and quantifiers:

- | | | | |
|---|---|---|---|
| 1. se mann | 2. we ealle | 3. seo aeþele | 4. þis eall |
| $\begin{array}{c} \alpha \\ \swarrow \quad \searrow \\ d \quad h \end{array}$ | $\begin{array}{c} \alpha \\ \swarrow \quad \searrow \\ h \quad q \end{array}$ | $\begin{array}{c} \alpha \\ \swarrow \quad \searrow \\ d \quad h \end{array}$ | $\begin{array}{c} \alpha \\ \swarrow \quad \searrow \\ h \quad q \end{array}$ |
| ("the man") | ("all of us") | ("the noble woman") | ("all of this") |

Premodifier structures are divided by the type of word realizing *h* element. Noun-headed groups show premodification by *d* element realized as demonstratives (*se*, "the/that", *þes*, "this"), possessives (*his*, "his", etc.), numbers, quantifiers like *sum* ("some"), *micel* ("much"), *fela* ("much/many"), and so forth. Rankshifted groups with structure *r h* may occur at *d*: submodification realized by an adverb. Premodification by *e* element is realized by adjectives and participles. Premodification by *n* element is realized by nouns, pronouns, and rank-shifted nominal groups. Case concord of the *d* and *e* elements with the *h* element is usually observed, the main exceptions being indeclinable possessives, numbers and *fela*. The case of *n* element is dative, or more frequently genitive. The following examples represent this range:

- | | | |
|---|---|---|
| 5. þæt scip | 6. his broþur | 7. þrim gearum |
| $\begin{array}{c} \alpha \\ \swarrow \quad \searrow \\ d \quad h \end{array}$ | $\begin{array}{c} \alpha \\ \swarrow \quad \searrow \\ d \quad h \end{array}$ | $\begin{array}{c} \alpha \\ \swarrow \quad \searrow \\ d \quad h \end{array}$ |
| ("the ship") | ("his brother") | ("three years") |
| 8. god man | 9. hwæles hyde | 10. hira land |
| $\begin{array}{c} \alpha \\ \swarrow \quad \searrow \\ e \quad h \end{array}$ | $\begin{array}{c} \alpha \\ \swarrow \quad \searrow \\ n \quad h \end{array}$ | $\begin{array}{c} \alpha \\ \swarrow \quad \searrow \\ n \quad h \end{array}$ |
| ("a good man") | ("whale-skin") | ("their land") |

Multiple premodifier structures in noun-headed groups show the sequences *d e h*, *d n h*, *d d h*, *d d e h*, and even a rare *e d h*. Exponents of the *d* element in these structures include the demonstratives, possessives, *þu* ("you") as a deictic, adjectives ending in *-weard* as deictics, and the quantifiers *eall* ("all"), *manig*

("many") and *begen* ("both"). The *e* element is realized by both adjectives and participles, the *n* element by nouns. Subdivision of the *d* element into d_1 d_2 and d_2 d_3 sequence indicates that d_1 is realized by *eall*, *begen* and *-weard* adjectives, d_2 by the demonstratives and possessives, and d_3 by numbers. Demonstratives and possessives may co-occur as d_2 d_2 in either order. Some examples are:

11. *pinne ancennedan sunu* 12. *se beorna brego* 13. *ealle þa hwile*

$$\begin{array}{c} \alpha \\ d \quad e \quad h \end{array}$$
 ("your only-begotten son")

$$\begin{array}{c} \alpha \\ d \quad n \quad h \end{array}$$
 ("the prince of men")

$$\begin{array}{c} \alpha \\ d_1 \quad d_2 \quad h \end{array}$$
 ("all the time")
14. *eall þeos maere gesceaft* 15. *wlancan þam wicge*

$$\begin{array}{c} \alpha \\ d_1 \quad d_2 \quad e \quad h \end{array}$$
 ("all this glorious creation")

$$\begin{array}{c} \alpha \\ e \quad d \quad h \end{array}$$
 ("that splendid horse")

Pronoun-headed premodifier structures show *n* *h*, with nouns, pronouns, deictics and numbers at *n*, indefinite pronouns like *hwylc* ("any", "anyone/-thing") and *gehwā* ("any", "anyone/-thing") at *h*. Adjective-headed groups show *d*, *e*, *n* and *r* elements as sole premodifiers, realized by demonstratives and possessives, adjectives, nouns and pronouns, and adverbs respectively. The *n* element in adjective-headed groups may also be realized by rankshifted nominal groups. A participle-headed group has premodifier *d*, realized by the demonstrative *se* ("the/that"). Apart from a *d* *h* structure, with numbers at both elements, the determiner-headed groups are also limited to *n* *h* structures, with nouns, pronouns, deictics and numbers at *n* element, and comparative and superlative adjectives, *manig* ("many"), *aenig* ("any"), *nan* ("none"), *sum* ("some"), and *fela* ("much/many") at *h* element.

16. *þraela hwylc* 17. *hocorwyrde dysige* 18. *sipes werig*

$$\begin{array}{c} \alpha \\ n \quad h \end{array}$$
 ("any servant")

$$\begin{array}{c} \alpha \\ e \quad h \end{array}$$
 ("the derisive foolish")

$$\begin{array}{c} \alpha \\ n \quad h \end{array}$$
 ("travel-weary")
19. *se frumcenneda* 20. *wedera cealdost* 21. *iglanda fela*

$$\begin{array}{c} \alpha \\ d \quad h \end{array}$$
 ("the first-born")

$$\begin{array}{c} \alpha \\ n \quad h \end{array}$$
 ("coldest of weather")

$$\begin{array}{c} \alpha \\ n \quad h \end{array}$$
 ("many islands")

The realization of postmodifier structures can be considered in the same order. Noun-headed groups have *q* elements realized by single nouns -- in genitive case -- adjectives, participles, and all subdivisions of determiner, usually in the same case as the *h* exponent, eg.:

22. fruman moncynnes 23. hring gyldenre 24. niceras nigene

$$\begin{array}{c} \alpha \\ / \quad \backslash \\ h \quad q \end{array}$$

 ("the origin of man") ("golden ring") ("nine water-demons")

Noun-headed groups also show *q* realized by rankshifted nominal groups and by rankshifted relative, participial and infinitive clauses. Multiple *q* is possible:

25. Eadweard se langa 26. ða sceoccan blissigende on eowerum

$$\begin{array}{c} \alpha \\ / \quad \backslash \\ h \quad q \\ \quad \quad \quad \backslash \\ \quad \quad \quad d \quad h \end{array}$$

 ("Edward the tall") forwyrd

$$\begin{array}{c} \alpha \\ / \quad \backslash \\ d \quad h \quad q \end{array}$$

 ("the demons rejoicing at your destruction")
27. gierd mid to þreageanne 28. haeleð min se leofa

$$\begin{array}{c} \alpha \\ / \quad \backslash \\ h \quad q \end{array}$$

 ("rod with which to chastise")
$$\begin{array}{c} \alpha \\ / \quad \backslash \\ h \quad q \\ \quad \quad \quad \backslash \\ \quad \quad \quad d \quad h \end{array}$$

 ("my hero the beloved")

Pronoun-headed groups frequently show *eall* ("all") or *sylf* ("self") as realizations of *q* element, less frequently relative clauses and participles. Adjective-headed groups show *q* realized by nouns, pronouns, nominal groups, and relative, infinitive or comparative clauses. The *q* element of determiner-headed groups is realized by noun, pronoun, adjective and deictic word classes, by rankshifted nominal groups and prepositional groups, and by rankshifted relative clauses, infinitive clauses, *þæt* ("that") clauses and comparative clauses. A few examples of this large range of possibilities are as follows:

29. me selfum 30. ðu ðe eart on heofenum 31. gerenode readum golde

$$\begin{array}{c} \alpha \\ / \quad \backslash \\ h \quad q \end{array}$$

 ("me myself")
$$\begin{array}{c} \alpha \\ / \quad \backslash \\ h \quad q \end{array}$$

 ("you who art in heaven")
$$\begin{array}{c} \alpha \\ / \quad \backslash \\ h \quad q \\ \quad \quad \quad \backslash \\ \quad \quad \quad e \quad h \end{array}$$

 ("adorned with red gold")
32. wurpe to beranne 33. anre þara burga 34. se ðe wille

$$\begin{array}{c} \alpha \\ / \quad \backslash \\ h \quad q \end{array}$$

 ("worthy to bear")
$$\begin{array}{c} \alpha \\ / \quad \backslash \\ h \quad q \\ \quad \quad \quad \backslash \\ \quad \quad \quad d \quad h \end{array}$$

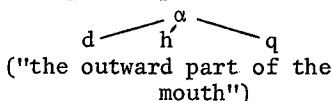
 ("one of the cities")
$$\begin{array}{c} \alpha \\ / \quad \backslash \\ h \quad q \end{array}$$

 ("he who desires")

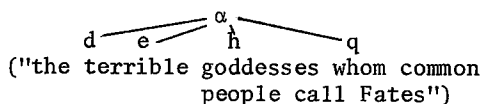
Among groups with both pre- and postmodification, *d h q* structures are mainly noun-headed, with demonstratives, possessives and numbers at *d* element; *q* is realized by nouns, *-weard* adjectives, participles, nominal groups, relative and participial clauses. The *e h q* structures are noun-headed, with adjectives at *e* element, and adjective or relative clause at *q*. An *r h q* structure has adjective at *h*, modified by adverb at *r*, comparative clause at *q*. The *d e h q* structure is represented by demonstratives at

d, adjectives at *e*, nouns at *h* and nouns, nominal groups and relative clauses at *q*. Some examples are:

35. *paem muþan uteweardum*

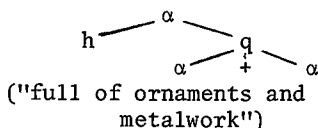


36. *ða gramæn gydena ðe folcisce men hatað Parcas*

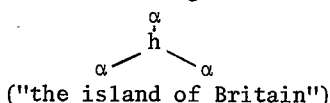


Word-complexes are represented at *e* and *n* premodifier elements, at *h*, and at *q*. Those at *e* and *n* elements are realized by adjectives and nouns respectively, and the same classes occur at *q*. Word-complexes at *h* are all appositive structures, mainly realized by nouns, or nouns in combination with pronoun or quantifier:

37. *full wraetta ond wira*

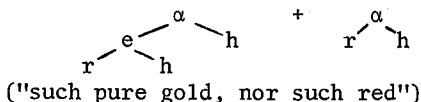


38. *Breten iegland*

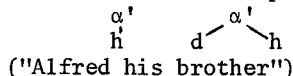


Group-complexes are represented by paratactic combinations of uncomplicated simple groups. Non-appositive types include repetition of *d h* and *h q* structures, and the structures *e h + r h*, *d e h + d h*. Appositive group-complexes are combinations of head-only groups with premodified groups. Some examples are:

39. *swa claene gold, ne swa read*



40. *Ælfred his broþur*



FOOTNOTES

¹The preceding analysis of strata and their components is derived from the views of M.A.K. Halliday. For some recent alternative views within systemic linguistics as to the type, number and location of these components, see Fawcett (1980), Martin (1981) and Gregory (1981, 1982).

²All of the Old English examples, and most of the modern English translations of these examples, are taken verbatim from these same sources. A number of structures or their realizations which are overlooked in the handbook method can be found in Cummings (1980, 1981). I have tried to avoid describing structures which are nominal groups or nominal-group complexes interrupted by elements from a different rank or level, which are describable as conjunctions, or which are aggregate proper nouns.

REFERENCES

- Ardern, P.S. 1951. *First Readings in Old English*. Wellington, N.Z.
- Berry, Margaret. 1975. *An Introduction to Systemic Linguistics: 1 Structures and Systems*. London: B.T. Batsford.
- Brook, G.L. 1962. *An Introduction to Old English*. 2nd ed. Manchester: Manchester University Press.
- Cummings, Michael. 1980. Systemic Analysis of Old English Nominal Groups. In *The Sixth LACUS Forum 1979*, Wm C. McCormack and Herbert J. Izzo, eds. Columbia, S.C.: Hornbeam Press, 228-242.
- Cummings, Michael. 1981. Systemic Phoricity in the Old English Nominal Group. In *The Seventh LACUS Forum 1980*, James E. Copeland and Philip W. Davis, eds. Columbia, S.C.: Hornbeam Press (forthcoming).
- Davis, Norman, ed. 1953. *Sweet's Anglo-Saxon Primer*. 9th ed. Oxford: Clarendon.
- Fawcett, Robin P. 1980. *Cognitive Linguistics and Social Interaction: Towards an Integrated Model of a Systemic Functional Grammar and the Other Components of a Communicating Mind*. Exeter Linguistic Studies, 3. Heidelberg: Julius Groos Verlag and the University of Exeter.
- Gregory, Michael. 1981. Metafunctions: Aspects of their Development, Status and Use in Systemic Linguistics. In *Current Trends in Systemic Linguistics*, M.A.K. Halliday and R.P. Fawcett, eds. London: B.T. Batsford (forthcoming).
- Gregory, Michael. 1982. The Nature and Use of Metafunctions in Systemic Theory: Current Concerns. In *The Eighth LACUS Forum 1981*, W. Gutwinski and G. Jolly eds. Columbia, S.C.: Hornbeam Press (forthcoming).
- Halliday, M.A.K. 1973. *Explorations in the Functions of Language*. London: Edward Arnold.
- Halliday, M.A.K. 1978. *Language as Social Semiotic: The Social Interpretation of Language and Meaning*. London: Edward Arnold.
- Halliday, M.A.K. 1979. Modes of Meaning and Modes of Expression: Types of Grammatical Structure, and their Determination by Different Semantic Functions. In *Function and Context in*

Linguistic Analysis: Essays Offered to William Haas,
D.J. Allerton, Edward Carney and David Holdcroft, eds.
Cambridge: Cambridge University Press.

Halliday, M.A.K. and Ruqaiya Hasan. 1976. *Cohesion in English*.
London: Longman.

Martin, J. 1981. Register and Metafunction. Department of
Linguistics, University of Sydney.

Mitchell, Bruce. 1971. *A Guide to Old English*. 2nd ed.
Oxford: Basil Blackwell.

Mossé, F. 1945. *Manuel de l'Anglais du Moyen Âge des Origines
au XIV^e Siècle. I. Vieil-Anglais. Tome Premier:
Grammaire et Textes*. 2nd ed. Paris: Aubier.

Quirk, Randolph and C.L. Wrenn. 1957. *An Old English Grammar*.
London: Methuen.

VOWEL AFFECTION IN DYNAMIC PHONOLOGY

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Dynamic phonology is a nonsegmental model abstracted from the findings of recent experiments in dynamic phonetics (see, for example, Mermelstein 1973, Sawashima and Cooper 1977, etc.). In several previous Fora of the Linguistic Association of Canada and the United States, I have presented particular aspects of this model and its application to various phonological phenomena. Most of the problems treated thus far have concerned the obstruction division—the relationships among the consonantal features or oppositions and their relationships with the other components of the model. In this paper, however, I examine one of the most prominent and widespread among the vocalic phenomena in language—vowel affection.

In traditional phonology, vowel affection (or umlaut) is described as a process in which a feature of one vowel affects the corresponding feature of a neighboring vowel, bringing about a partial or total assimilation. Perhaps the classic example of vowel affection can be found in Old High German. In Old High German, vowels were pertinently marked by tongue-body height and by lip roundness (protrusion), but they were not pertinently marked by tongue-body depth. Thus, the syllabic vowel in the word *wurm* 'worm' was marked by the features high and rounded. The plural of this word was spelled *wurmi*, with the *i*-stem ending marked by the features high and unrounded. As it were, this high unrounded vowel was always pronounced with the feature nonback, or shallow. Since speakers could pronounce this latter feature during the articulation of the root vowel without any effect on the pertinent features of the root vowel, the plural form was actually pronounced as though it were spelled *wyrmi*, as speakers anticipated the nonback feature of the vowel ending. Because the Middle High German plural was *würme* (New High German *würmer*), we know that the Old High German plural form would better have been represented as *wyrmi*, and I shall use this spelling here for the sake of clarity.

The phenomenon of vowel affection is very well explained by relationships described in the literature of experimental dynamic phonetics. For example, Mermelstein states as one of the fundamental principles of his articulatory model: 'Consonants are not defined directly in terms of variable values but by constraints on articulator position relative to the fixed structures. Articulators independent of the specific constraints are free to take on positions independent of the consonant under production subject to the requirement that they do not otherwise constrict the vocal tract' (1973: 1082). As the nonback vocalic feature of the second vowel can transit the consonantal obstructions without any effect upon itself, it can thence simply extend back into the first vowel

by simple anticipation. Indeed, if there were no apparently 'intervening' consonants, there would be nothing of particular interest phonologically in vowel affection. Thus, this phenomenon is a simple, straightforward phonetic fact, based upon common articulatory habits of speakers.

It is interesting to see what traditional segmental phonology has done with such a simple phonetic occurrence. In most models, it is handled through a choice, alternation, or transformation of one vowel or vocalic feature (or component) in the environment of another vowel or vocalic feature (or component). For example, we may posit a generative structural rule as in figure 1.

While this description may differ significantly in many important aspects from descriptions in other segmental models, for the purposes of illustrating how the segmentality of phonology affects the analysis, we can indeed accept it as representative of segmental theory in general (issues of mutation versus realization, feature versus phoneme, etc., aside). Indeed, whether we say that an underlying segment is rewritten with the feature [-back], an underlying archisegment is written with the feature [-back], a fundamentally [+back] segment is rewritten as a [-back] segment, a [+back] segment is supplanted by a [-back] segment, a choice is made for the marked [-back] segment in lieu of the unmarked [+back] segment, or a [-back] segment is chosen for reasons of complementary distribution over a [+back] segment, the basic segmental tactic is actuated by a segmental environment: Beyond the *n*-number of consonants is a vowel that effects the phenomenon (or that necessarily co-occurs with it).

A closer examination of this description reveals that, while it may be a fine 'algebraic' representation of result, it does nothing but obfuscate the real phonetic processes that form the cause. It is therefore not explanatory.

According to this generative description (with analogous variations in other segmental models), some feature of the vowel beyond the consonant(s) leaps back over the consonant(s) and affects the vowel in question, causing it to be realized with the feature [-back]. Actually, this critique is rather too generous in that it supplies the unwritten justification for the affection—the actual description does not even go so far as to explain why the vowel is affected, save for the collective peculiarities of the structural environment.

Granting an assumption of cause implicit in the description (but realizing that it is really not there), we find ourselves analyzing vowel affection by the process of a feature leaping over at least one consonant that sits between the two vowels. Such a process, however, is physiologically and acoustically unfounded. As pointed out by Mermelstein (1973) and many others, vowels are produced by certain movements and configurations of the tongue-body, lips, and jaw; and consonants are produced by the obstructionary movements of other articulators. In speaking, one does not produce a vowel, stop, produce a consonant, stop, and produce a vowel; nor for that matter does one drift through vowel to consonant to vowel. Rather, one produces the syllable by articulating the vowel and by simultaneously obstructing this vowel initially and/or finally by the consonantal articulators.

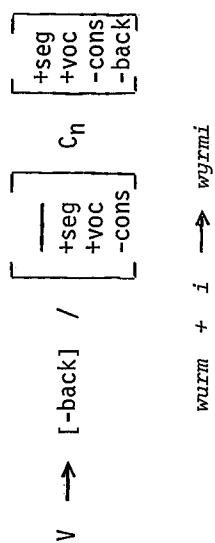


Figure 1

The fact is, then, that the consonant in the VCV sequence that forms the environment for vowel affection does not interrupt the flow from one vowel to the next, but it is only imposed upon the transition between vowels (at the syllable boundaries). This description is well supported in the acoustic literature (see, for example, Ohman 1966, 1967), as the vocalic formants are traced through the obstructions from syllable to syllable and are no more interrupted than are the movements of the vocalic articulators in the oral cavity. Furthermore, as demonstrated by Bell-Berti and Harris (1979), the initiation of the vocalic feature (roundedness) is performed at a particular time prior to the release of preceding obstructions, regardless of the type and number of those obstructions. Vowels are thus produced according to their own schedules and independently of consonants.

In a segmental model, then, the physiological and acoustic facts of the consonant-vowel relationship are grossly misrepresented. It is no wonder that the process of a feature's leaping over a consonant to get at a vowel already pronounced should indeed produce an image with something of the absurd. Such a description is as unacceptable for explanatory purposes as it is disappointing in view of the phonetic facts.

There are, however, other, less segmental models of phonology. For example, the prosodic analysis of the London School (see Firth 1948) and the use of the quasi-stepmatrix in stratificational grammar (see Lockwood 1976) both avoid the image of a feature jumping over the consonant. Again, these approaches (while certainly having their differences) are close enough in their prosodic descriptions to allow one model to be examined as representative of semi-segmental models in general for our purposes here.

In the prosodic analysis of Firth and his followers, we find a semisegmental framework, with the structural realization of a sequence of consonants and vowels, compositionally empty except for the feature [+segment] and the feature [+consonant] or [+vowel] (compare Mitchell 1975). This structural portion of the description suggests several problems (as pointed out in Griffen *in press*) and is not necessarily shared by other semisegmental models (or at least not so openly expressed).

Of greater importance here is the systemic portion of the description, in which the prosodies (or prosodic features/components) are realized across the segments. This is, after all, the stronger point of comparison between this model and the quasi-stepmatrix. Such a description can be seen in figure 2, in which *gl* is glide, *h* is high, *l* is labial, *n* is nasal, *r* is rounded, *s* is shallow (or nonback), and *tr* is trill.

There are two rather glaring problems with this analysis from the standpoint of modern dynamic phonetic research. First of all, it is a basic tenet of phonetics that the vocalic features are constrained by the consonantal. As Mermelstein points out in the citation above, for example, it has been found in articulatory experiments that consonantal obstructions in no way interrupt the vowels they constrain (though, to be sure, there are some predictable affects—see, for example, Gay 1977); rather, they are simply imposed

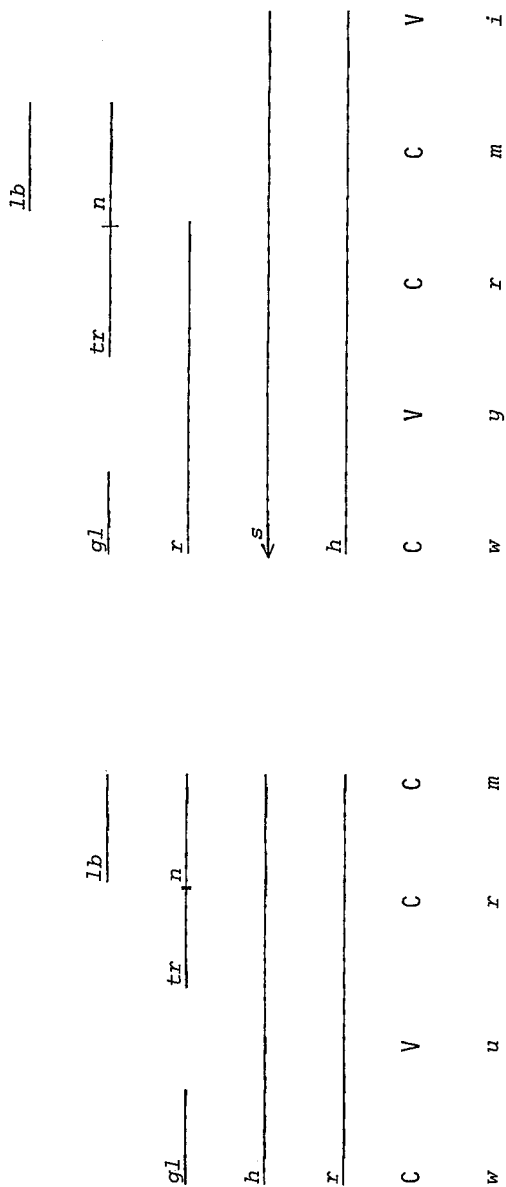


Figure 2

upon a continuous vocalic pattern, yielding a natural division of features into a syllabic consonant/vowel hierarchy of constraint. The traditional prosodic method does not account for this fundamental difference in feature type at all, but quite deliberately lumps all prosodies together without any further organization. As such, then, it merely records the prosodic features and their ranges, while ignoring vital relationships among them in the phonetic syllable organization.

Moreover, there is an elementary breakdown in the system due to the lack of proper syllable organization in this particular word. The initial consonantal obstruction in *wurm* is marked by lip-roundness, but one of the functionally significant features of the Old High German vowel is its use of the very same feature. In order to describe this occurrence of roundedness constraining roundedness, the traditional prosodic approach must introduce a glide prosody. But a glide is neither a prosody nor a feature (or component, as it would be realized in the quasi-stepmatrix). Rather, it is a segment type—a segmental classification neither consonantal nor vocalic (see, however, Mitchell 1975: 35).

Thus, under the guise of a systemic prosodic feature is a new structural element, one that will greatly complicate the system-structure framework, given the well-known acoustic relationship between the recognition of labial obstruction, glide, and vowel as a function of tempo (see Liberman et al. 1956).

Nonetheless, the prosodic approach does have one clear advantage over the segmental: It eliminates the troublesome necessity of a feature's leaping over a consonant. The prosodic feature non-back simply spreads back over the root vowel directly from the vowel ending (compare the spreading of a consonantal prosody as in Grifflen 1975). On the other hand, there is no way of telling that this is a fundamentally vocalic phenomenon (as opposed to a consonantal one), as the crucial difference between consonant and vowel is not even clear enough in the structure and is certainly not reflected in the syllable organization.

In dynamic phonology, the problems of describing vowel affection simply do not exist, for dynamic phonology is merely functional dynamic phonetics and uses precisely the same structure as that developed from the phonetic evidence. Thus, as long as vowel affection is a phonetic phenomenon (that is, it does in fact exist in speech sound), and dynamic phonetics records and predicts such phenomena faithfully (which it does through workable models that do not introduce such unsubstantiable elements as segmental bundles), then there is no structural reason why the phenomenon cannot be described just as faithfully in dynamic phonology.

The basic principle of dynamic phonology (and also of dynamic phonetics) is that speech sound is a system of dynamic coarticulatory constraint. As pointed out in previous Fora, the airstream is constrained by the laryngeal apparatus, creating the fundamental sound; this phonated airstream is further constrained by the vocalic apparatus, creating formants and forming the syllable base; and this phonated and syllabicated airstream is further constrained by

obstructions, creating disruptions in the harmonic syllable. Each of the three divisions (laryngeal, syllable, obstruction) is further constrained by finer articulations within the division, or division prosodies. This is represented schematically in figure 3.

Further in accordance with the findings of dynamic phonetics, the basic organizational unit, the only segmentable sequence (see Mermelstein 1975), is the syllabic frame. The tactic of dynamic phonology is simply to mark functionally pertinent phonetic features within the syllabic frame, just as they occur in the dynamic phonetic evidence and without any structural change whatever. It is this latter point that ensures that there be no interstratal discrepancies and that the phonology be nothing more than functional phonetics in fact as well as in theory (compare Martinet 1949).

When we mark the functionally pertinent features of *wurm* and *wyrmi* in the syllabic-frame format, we find the arrangement in figure 4, which uses the same notations as those in the prosodic analysis of figure 2.

Insofar as the phenomenon of vowel affection is concerned, we should note that the syllabic vowels in the description are continuous. This is exactly as it is in reality, for the vocalic articulators move from position to position independently of the consonants which (as aptly demonstrated by Bell-Berti and Harris 1979) do not affect the initiation of the vocalic features and thus do not affect the transition from vowel to vowel.

As in the prosodic analysis, the feature nonback simply extends back into the root-vowel syllable, as the tongue-body fronts in anticipation of the ending-vowel syllable. Acoustically, this entails nothing more than the leveling of a transition formant pattern. Such a description does not deviate at all from the phonetic evidence, for no artificial segmental boundaries have been created.

Compared with the prosodic analysis, though, the dynamic analysis fares much better. By maintaining the proper phonetically justifiable syllabic relationship between the constrained vowel and the constraining obstruction, the dynamic analysis reflects the organization of the syllable as a speech unit, not as an artificial sequence of consonants, vowels, and whatever other structural elements one may have to add to make the description work. This is to say that while the prosodic analysis and the quasi-stepmatrix simply lump the prosodic features together, the dynamic analysis separates them in the same way that dynamic phoneticians have found them to be separated in reality. Thus, the system once again remains faithful to the phonetic evidence by not introducing an artificial element, albeit an 'element' of disorganization.

Furthermore, by maintaining the features in the proper places in the syllabic frame, we eliminate the problem of the glide. The initial obstruction of roundedness (without occlusion) is entered as an obstruction prosody feature constraining the syllabic roundedness. Such a practice has been found to be quite common—a characteristic of a constrained division may be realized as a feature of a constraining division. In such a case, the constraining prosody is realized to a heightened degree. Thus, for example, we can clearly hear aspiration as an obstruction prosody in whispered speech,

Obstruction Prosody Obstruction	<i>Consonantal Features</i>
Syllable Prosody Syllable	<i>Vocalic Features</i>
Phonation Pattern Prosody Phonation Pattern	<i>Laryngeal Features</i>

Figure 3

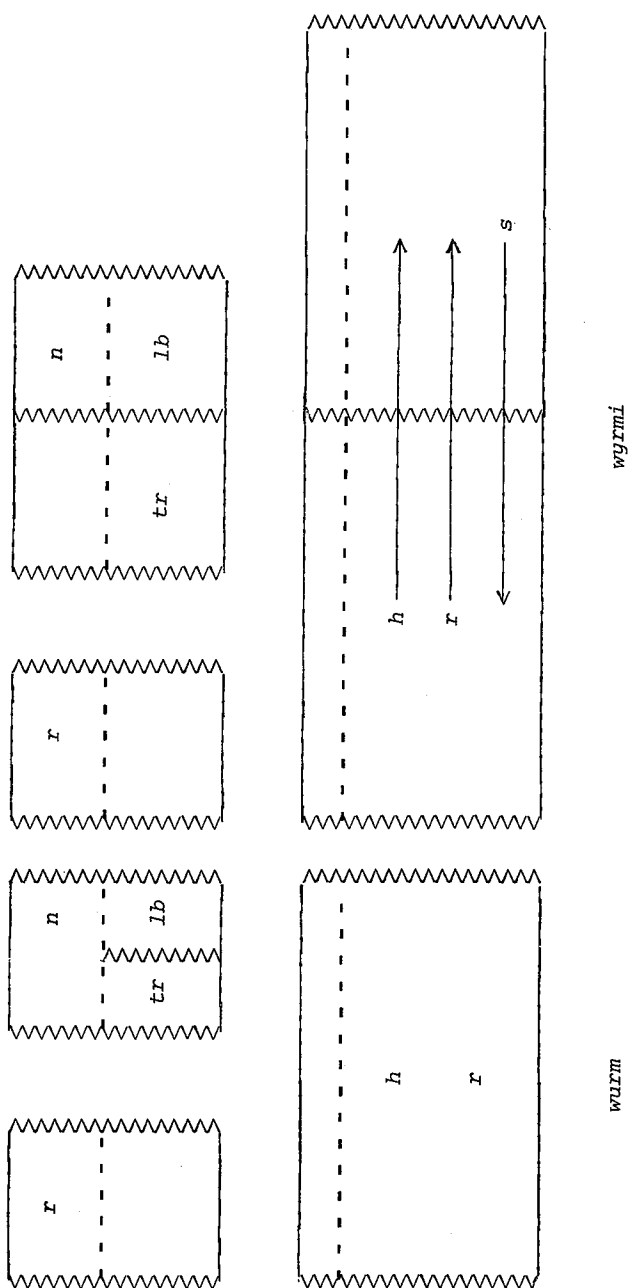


Figure 4

with its phonational characteristic of aspiration throughout. Indeed, if this were not the case, then we could not possibly understand a Frenchman with idiolectal nasalized speech, in which we would have to distinguish among obstructional, syllabic, and background nasality produced simultaneously. In the case at hand, the durational relationship among bilabial obstruction, glide, and vowel is reflected in the functional position in the frame—main obstruction division feature, obstruction prosody feature, syllable division feature (in this instance of gliding).

Thus, dynamic phonology produces a description of vowel affection that introduces no artificial nonphonetic distinctions and that maintains the phonetic principles that (1) vowels are articulated independently of the obstructions that constrain them, (2) the syllabic vowels in sequence are produced by continuous movements from one position to another, and (3) the articulator is free to take on the position it will have in a following syllable so long as it does not affect the pertinent positions needed in the communication of the syllable currently pronounced.

Old High German vowel affection and vowel affection in general, then, are a realization of that third principle facilitated by the first two. The dynamic phonological description represents this phenomenon in a simple, straightforward manner that is faithful to observed physiological and acoustic behaviors. It needs no 'algebraic' manipulation to account for the phonetic event.

References

- Bell-Berti, F., and K.S. Harris. 1979. 'Anticipatory Coarticulation: Some Implications from a Study of Lip Rounding.' *Journal of the Acoustical Society of America* 65, 1268-70.
- Firth, J.R. 1948. 'Sounds and Prosodies.' *Transactions of the Philological Society*, 127-52
- Gay, T. 1977. 'Articulatory Movements in VCV Sequences.' *Journal of the Acoustical Society of America* 62, 183-93.
- Griffen, T.D. 1975. 'On Describing the Cluster Prosody.' *The First LACUS Forum*, ed. by A. Makkai and V.B. Makkai, 140-7. Columbia: Hornbeam.
- Griffen, T.D. in press. 'A Dynamic Nonsegmental Model and the London School Tradition,' *Advances in Nonsegmental Phonology. The Semi-centennial of London School Linguistics*, ed. by C.T. Mason.
- Lieberman, A.M., P.C. DeLattre, L.J. Gerstman, and F.S. Cooper. 1956. 'Tempo of Frequency Change as a Cue for Distinguishing Classes of Speech Sounds.' *Journal of Experimental Psychology* 52, 127-37.
- Lockwood, D.G. 1976. 'Alternatives to Matrix Models in Phonetics and Phonology.' *The Second LACUS Forum*, ed. by P.A. Reich, 141-53. Columbia: Hornbeam.
- Martinet, A. 1949. *Phonology as Functional Phonetics*. Oxford.
- Mermelstein, P. 1973. 'Articulatory Model for the Study of Speech Production.' *Journal of the Acoustical Society of America* 53, 1070-83.
- Mermelstein, P. 1975. 'Automatic Segmentation of Speech into Syllables.' *Journal of the Acoustical Society of America* 58, 880-3.
- Mitchell, T.F. 1975. *Principles of Firthian Linguistics*. London: Longman.
- Öhman, S.E.G. 1966. 'Coarticulation in VCV Utterances: Spectrographic Measurements.' *Journal of the Acoustical Society of America* 39, 151-68.
- Öhman, S.E.G. 1967. 'Numerical Model of Coarticulation.' *Journal of the Acoustical Society of America* 41, 310-20.
- Sawashima, M., and F.S. Cooper (eds.). 1977. *Dynamic Aspects of Speech Production*, Tokyo: University of Tokyo Press.

SOUND CHANGE VERSUS SOCIAL SHIBBOLETHS

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The broader brushstrokes, applied to the background of that diachronological canvas which portrays those forces affecting phonological change have persisted. Sturtevant (1947) discussing analogy, phonetic laws and borrowing shared much with Hockett (1965) writing nearly a score of years later. Quite concisely echoing considerably similar considerations subsequently is Hodge (1974: 211-215), particularly in his postulates ten through nineteen.

I do not mean naively to maintain that significant and substantial theoretical and methodological disputes are either scant or absent. Rather, I refer to the obvious fact that the field has had a fairly exclusive focus. Understandably and reasonably, investigators have sought answers regarding general influences upon phonological forms which affect varying reflexes in related languages.¹

Synchronic studies of variation can scarcely escape diachronic implications. Merely noting that an alternative variant's innovation or projecting one variant's increase at its competition's expense already reflects the historical realm.

One could argue that every study of variation is, in some sense, both a diachronic and a sociolinguistic study. The introduction, distribution and survival of variants reflect migration, social-differentiation, foreign-language contacts and many other influences of society upon them.

1

This focus on generality is by no means a passed, past matter as the following recent examples attest. Easily accessible to LACUS readers are Levin (1975) on borrowing, Markey (1976) on analogy, and Hall (1980) largely on phonological reconstruction.

Sociolinguistic studies have enriched our understanding of society's effects upon phonological and lexical variation. Studies of social conditioning upon linguistic variation abounded in the forties, fifties and sixties.² These studies spanned a topical range from single item variation to large-scale urban dialect surveys.³

Labov (1963) and (1965) directly credits, as a factor in phonological change, imitation of prestigious speakers' speech by non-prestigious speakers. His claim, not novel when starkly stated, distinguishes itself from many predecessors however. In his view, social influences on phonological variation require no special impacts like conquest or migration to operate. Rather, they are ever ongoing reactions and responses to social differentiation.

Having a general focus, Labov's works are naturally not, in any sense, divorced from past work. In fact, he credits Sturtevant (1947)⁴ for the outline of his scheme. My point of departure also is Sturtevant (1947: 84) who states: (underscores mine)

The doctrine of the regularity of phonemic change is firmly based upon a vast amount of careful observation; it cannot be based upon inference from the nature of such change, since there is good reason to believe that phonemic changes can be made regular in several different ways.

2

A number of such studies' titles are available in the general bibliography of Hoffman (1970: 116-122)

3

Those with urban-oriented sociolinguistic interests can find discussion and sources in Hoffman (1970). The discussion occurs in sections 5 and 6, pp. 19-29. The sources discussed are in the bibliography of sources cited, pp. 112-115.

4

More specifically, Labov (1966: 84) credits Sturtevant (1947: 81-84) for a scheme outlined in the latter's chapter VIII. I interpret the chapter thesis as summarized in (Sturtevant: 80), par. 122.

"Regularity" and "generality" though not synonyms have had a history of close association in our discipline. Perhaps, the closeness is counter productive. I do not intend contradiction of any claim that generalizations about language are both necessary and useful. Rather, it is the frequent occurrence of large residues of exceptions which concerns me.

Applied linguists, teaching languages, often find memorization of related groups of exceptions more efficient than teaching rules with limited generality. Dialectologists, regional or social, searching beyond regional and national standards, uncover many "exceptions" to general rules abstracted from any standard. Some linguists rewrite more and more involved generalizations to accomodate the ever increasing amount of "exceptions" uncovered. Band-aid rules, applied to more band-aid rules ad taedium, are making their framework resemble a mummy more than a model.

Exceptions are, of course, no new news to any linguist. What any of us do with them is another matter. Recognition that generalizations may represent tendencies rather than rules is a common response. Historical linguists speak of drift--where related languages, often but not always, change in analogous manners. Sociolinguists see a greater possibility for generalizations evident in the group of speakers rather than in the individual. The latter tendencies are expressed more quantitatively than qualitatively.

The possibility of capturing generalizations about sound change which admit of only few exceptions seems elusive. However, this does not obviate the premise that sound change operates regularly--merely that factors influencing sound change conflict.

I would like to use a non-linguistic analogy to illustrate what I mean concerning regularity versus generality. There are limits on our ability to generalize about patchwork quilts regarding specific predictability of any one quilt's final form. Yet, patchworks are produced by regular principles within constraints of skills, taste, material and traditions.

Stretching my fabric analogy, I suggest that linguists have an inclination to deal with languages as if languages were tartans. The greater part of linguistic behavior is viewed as patterned, regular, recursive etc. Exceptions are analogous to bleeding dyes, rents or irregular yarns--the tartan weavers' performance rather than their underlying competence.

Perhaps, languages more closely resemble patchwork quilts. Consider the quiltmakers' milieu. Quilters take whatever materials are at hand from their own, their relatives' or neighbors' inventories. They assemble an interrelated grouping from among many possible forms and patterns using the various originally related and unrelated materials.

From oddly-assorted remnants of clothes or yard-goods, the quilt makers produce something with both a pragmatic and aesthetic function. Where do exceptions fit in this analogy? Exceptions, in this latter view, are smaller patches in smaller patterns on the quilt. Tendencies--in the former view, rules or laws--are, in this latter view, larger patches on larger patterns.

I am hardly alone in my concern with smaller patches and their relation to historical and socio-linguistics however. Tyma (1978 and 1979) and Wescott (1975 and 1978) address issues which fit comfortably within the notion presented. Their theses and arguments fall without this paper's scope. The following selected paraphrases and citations, nonetheless, will illustrate their relation, as I see it, to this discussion.

Tyma (1978 and 1979) speaks of philosophic etymologizing which means more than a restatement either of folk-etymology or remorphologizing. Tyma (1979: 52-3) asserts there is sufficient evidence to suggest that every living language exploits some principle of form-meaning identity. This principle operates in the process of borrowing, in spontaneous generation, and in renovation of older forms. He suggests two kinds of "etymology." One is "vertical" (chronological through time) and hence truly derivative. The other is "horizontal" (synchronic or within a time frame) and is, at best, quasi-derivative. He sees either kind of etymology as providing raw material for the other.

Tyma cites, Bloomfield (1933: 245), who posited a "root-forming"⁵ morpheme -ash meaning "violent movement." Bloomfield's examples included the set: bash, clash, crash, dash, flash, and gash. Tyma suggests that Bloomfield may have been suggesting a horizontal association rather than a derivative association.

5

Trager (1972: 54, 339), like Bloomfield, asserts some morphemic status for similar sounding and semantically related sequences. Trager cites Markel and Hamp (1961) who term these: psychomorphs.

Tyma concludes some forms resemble one another in some obvious fashion. Their physical resemblance is confirmed by meanings associated with the forms. The sets of forms may contain a common etymon or etyma. However, no one term can be considered the root or base from which the others are derived synchronically.

Wescott (1979: 81-2) challenges traditional etymology. He quotes an assumption of Linguists in general and etymologists in particular. The assumption is that vocabulary items in any given language are monogenetic and derived from single ancestral items. His own etymological experience led him increasingly to the opposite conclusion. The more he tried to "nail down" most words' origins, the more indeterminate origins became regarding clear-cut single sources.

Wescott suggests that most of our overt language behavior is accompanied by covert word-association activity. He discusses the situation where such word association becomes overt as in nonce-words or slips of the tongue or ear. Here word associations normally have no perceptibly lasting effects on our speech or writing. Yet, he contends that the process, so constant and prolific, given enough people and time, eventually reshapes our lexicon.

Wescott concludes that lexical ancestry is relative not absolute in nature. He suggests that etymologists should distinguish between what might be called "lineal" and "collateral" ancestors of any given lexeme. For Wescott, lineality itself is a gradient, not discrete, aspect of lineal ancestry. Because of this derivational relativity, he finds a gradual "fade-out" in the etymological antecedence of any lexeme. This fade-out leads inescapably to subjectivity in the assessment of degrees of lexical ancestry. While mitigated by active etymological collaboration, Wescott contends that it cannot be eliminated. At best, he believes it converted into "intersubjectivity"--that is, collective (as opposed to individual) subjectivity.

Both Wescott and Tyma explore playful aspects of language. They note processes for play have counterparts in productive grammatical processes whether within the same language or between different languages.⁶

However, a single example from Wescott (1976: 500) illustrates processes other than analogy which interfere with the regularity of phonetic laws.

... allolinguistic vocabulary does not seem to undergo the slow but steady replacement characteristic of microlinguistic vocabulary. Instead, the allolinguistic lexicon tends either toward evanescence or toward multimillennial persistence. The evanescent lexicon usually consists of slang and similar in-group argots, while the persistent lexicon consists of echoics and other iconic vocables. (Echoics, interestingly, tend not only to resist lexical replacement but also to resist sound changes of the type covered by such formulae as Grimm's Law. Thus, the reconstructed Proto-Indo-European forms *pap-, "teat," *tut-, "to hoot" and *kuku-, "cuckoo," appear in English as pap, toot, and cuckoo, rather than as comparative philologists would normally predict, *faf, *thuth, and *hough.)

There are morphological and lexical considerations other than analogy which affect expected phonological realizations. These concern a number of investigators. Sullivan (1977: 82-89)⁷ and (1978: 452-458), among other topics, treats phonological differences between lexical items where one might expect homophony.

Sullivan (1977 and 1978) used, among other examples, his dialect's different phonological realizations between "Littler," the name, and "littler," the comparative. Hoffman (1979b) makes similar distinctions. "Aisle," "hour," and "Littler" have one realization of two syllables each in my dialect. The contraction "I'll," "our," and "littler" may either be homophonous with the former list or occur in an alternative form. The first two examples may occur as single syllables with smoothed vowel nuclei. The last example may occur with three syllables and with a /d/ rather than a /t/.

7

Sullivan (1977) reviews a book on proper names. Wescott (1979: 84-5) also discusses names. It is probably no coincidence that my "patches" searches turn up discussions of names. Onomastics may well be the pioneer discipline of small, or perhaps, medium-sized patches on the quilt.

Sullivan explains such differences utilizing Stratificational theory; Hoffman (1979b) treats similar concerns employing Aspectual theory.⁸ Smith (1967: 336-340) and (1968: 74-84) as well as Hoffman (1976: 137) and (1979a: 185) discuss related concerns.⁹

The following figures illustrate a "patch" less worked upon. Quotation marks enclose orthography; periods enclose morphophones;¹⁰ slashes enclose phonemes,¹¹ and brackets enclose phones.¹²

Figure One presents three lexical items in my idiolect.¹³ The second item has two possible phonemic expressions; the first and the last have one each. Asterisks represent hypothetically posited realizations--how alternatives would likely be expressed were they actually to occur. Horizontal comparisons should indicate, however, that the hypothesized realizations conform to the dialect's phonotactics.

8

Reviewing literature on higher-level conditioning of variation, I became aware of some convergence of Aspectual and Stratificational concerns. Compare Smith (1967: 311-312), Trager (1972: 57-8) and Lockwood (1978: 220-223).

9

For a discussion of morpheme boundary in Aspectual theory, see Trager (1972: 49-90) as well as Smith and Sustakoski (1964, vii; 1-51).

10

For a discussion of morphophononic notation, see Smith (1967 and 1968).

11

For a discussion of phonemic notation, see Trager and Smith (1951).

12

Phonetic notation is predominantly from Trager and Smith (1951) and from Trager (1964).

13

The idiolect is a combination of Northern Middle-western, urban (Chicago)--mixed with Western New York, urban (Buffalo). The /eh/ realization of æ. is a Western New York borrowing. The [L], original in the former, occurs in most positions without [l] co-articulation as found in some related Eastern dialects. In Western New York, some speech therapists treat [L] as a speech defect. Like many other American dialects, preceding apicals dissimilate the /y/ of yuw.

"g o v e n n o r"

g.ə.v.r.n.o.r.

"f e b r u a r y"

f.e.b.r.yu.w.æ.r.i.y.

"l i b r a r y"

l.əy.b.r.æ.r.i.y.

1* /g ə v i r n i r/

1 /f e b r u w e h r i y/

1 /l ə y b r e h r i y/

2 /g ə v i n i r/

2 /f e b y u w e h r i y/

2* /l ə y b e h n i y/

1* [ɹəgə:v ɹi'n ɹi]

1 [f e . b ɹ u ɹ e ə ɹ i]

1 [l ə ɹ . b ɹ e ə ɹ i]

2 [ɹəgə:v ɹi'n ɹi]

2 [f e . b ɹ u ɹ e ə ɹ i]

2* [l ə ɹ . b e ə ɹ i]

"f r a c t u r e"

"l e c t u r e"

"p i c t u r e"

f.ɹ.æ.k.t.yu.w.r.

l.e.k.t.yu.w.r.

p.i.k.t.yu.w.r.

1* /f r e h k ɹ i r/

1 /l e k ɹ i r/

1* /p i k ɹ i n/

2 /f r e h k ɹ i r/

2 /l e k ɹ i r/

2 /p i k ɹ i n/

3 /f r e h ɹ i r/

3* /l e ɹ i r/

3? /p i ɹ i n/

1* [f ɹ e ɹ k t ɹ i]

1 [l e k t ɹ i]

1* [p i k t ɹ i]

2 [f ɹ e ɹ k ɹ i]

2 [l e k ɹ i]

2 [p i k ɹ i]

3* [f ɹ e ɹ t ɹ i]

3* [l e t ɹ i]

3? [p i t ɹ i]

For the item "governor," my only expression is listed beside number two beneath "governor" in Figure One. The first expression might occur in my original dialect as a spelling pronunciation, but I have not heard it. "February" is different. From first until ninth grade, various teachers remonstrated me among other pupils for dropping the "r." Consequently, two expressions are now in my idiolect: the original r-less and the learned r-full alternative. In "library," the /r/ is never absent. However, speakers of social dialects different from mine, in both Chicago and Buffalo, have r-less expressions as alternatives.

Whatever conditions /r/ loss--the following r., the preceding labial, or both--phonotactic pressure is for the loss. Social pressure, possibly the influence of the orthography, is for /r/ retention. The former succeeds and the latter fails in "governor." The reverse holds true for "library." Both affect "February."

In figure two, three alternatives are presented. In all three cases, the second numbered line of alternatives includes my normal expression. In "lecture," however, as an academic, I have acquired a learned alternative with /č/ which more closely reflects the orthography. The /č/ does not occur in either "fracture" or "picture."

In regard to the total loss of /k/, I have not heard "fracture," without it, in either Chicago or Buffalo. I have heard "lecture" homophonous with "lecher" in Buffalo among speakers with certain substratum influences. "Picture" without the /k/, however, occurs frequently in both Buffalo and Chicago in various basilects. I suspect it may lurk within my own unmonitored speech.

An acceptability hierarchy can be inferred. Alternatives with closest orthographic correspondence are more formal than or possibly preferred to the second numbered line. The line of alternatives with the loss¹⁴ signal uneducated or unmonitored speech, particularly in the shibboleth word: "picture."

¹⁴

Elsewhere, /k/ loss poses little or no social stigma, e.g. "arctic" a.r.k.t.i.k. /artik/.

What have these sets of ungeneralizable data have to do with sound change regularity? In both cases, I contend that regular processes operate in conflict. The First Figure data present no clear victor; the Second Figure data suggest an opportunity for generalization.

In the second figure data, there are social pressures, probably orthographic also, to resist any sound change. There are pressures, phonotactically, to lose the /k/. How to characterize the alternatives with /š/ instead of /č/ realizations depends on one's theoretical outlook. One could maintain that s. replaces t., conditioned morphologically, or that [t] is dissimilated between [k] and [š].

Generalizations about phonological changes, described in purely phonological terms, may be statements predominantly about social consensus. Suppose the second line were to achieve consensus status, to be the only surviving alternatives for the dialect. One could write fine phonological rules to explain the process of the sound changes. One could write either t. becomes s. between k. and yuw. or [kts] becomes [kš]. If the third line survived, one could write k. is lost before t.yuw.

However, there is no guarantee that a dialect or language will generally apply one among competing processes throughout the lexicon. Therefore, sound changes will always operate regularly but may not always offer opportunities to generalize.

Such processes as overcorrection and neutralization are frequently resisted by language-purity guardians. A stigmatized process or its application to one or several lexical items may be partially but not fully resisted. Consequently, generalizations about sound changes--without, not only exceptions but also, sets of exceptions--are elusive.

Stigmatized processes may be resisted by or succumbed to differently by speakers of different regional and social dialects. A stigma itself sometimes has value for group-identity maintenance.

Certain morphological sets can be interpreted as mixed results of multiple conflicting processes. English past tense formation is such a battleground. One can easily identify the subsets synchronically by their shared characteristics. That is, the regular past, the various ablaut irregulars, the -t past, the preterite weak set etc. These can, however, be interpreted dia-

chronically as products of conflicting processes with varying successes throughout the English verb lexicon.

The label "regular" can be interpreted as a large patch on the quilt. The label "productive" can be interpreted as the process which is winning. "Burned" and "burnt," "knew" and "knowed," "lit" and "lighted"--among others--still show that the conflict continues.

Drift may be interpreted as the same original process succeeding with no or analogous conflicts in languages of common descent. Such a process need not always have been the productive process at the time of splitting or differentiation. Also, such a process need not necessarily surface in acrolects with orthographic representation.

Exceptions themselves can likewise be reinterpreted. On the one hand, an exception can be a beachhead or an "innovation." It would then exemplify a novel conflicting process which the language has borrowed, has used elsewhere, or has originated. On the other hand, an exception can be residue or a "relic," a holdover reflecting a currently inoperative process.

Careful linguistic investigations have always reflected such "patches" to some extent. They are listed in inventories or notes in historical studies, in regional and social dialectology, and in various sociolinguistic studies. The latter studies, the sociolinguistic, have shed much light on the social factors in sound change. These studies' results may yet lead to a more systematic approach to describing, cataloguing and accounting for "exceptions" and "irregularities."

Bibliography:

- Bloomfield, Leonard. 1933. Language. 19. 185-204.
- Hall, Robert A. Jr. 1980. "A Comparative Reconstruction (Especially in Romance)--How Far and How Valid?" The Sixth IACUS Forum 1979. Edited by William C. McCormack and Herbert J. Izzo. Columbia S.C.: Hornbeam Press Inc.
- Hockett, Charles F. 1965. "Sound Change." Language. 19. 185-204.
- Hodge, Carleton T. 1975. "A Set of Postulates for Comparative Linguistics." in (Makkai and Makkai).

- Hoffman, Melvin J. 1979. "Examination of Parallels among Strata in Aspectual Phonological Theory." in (Wölck and Garvin).
- . 1976. "Problems from Implicit Premises in Classical Phonemics: Examination, Identification, and Current Implications." in (Reich).
- . 1979. "Reevaluation of Morphological Conditioning of Phonemic Expressions in Aspectual Phonological Theory." Unpublished Paper Presented at the 10th. Annual Conference of the Niagara Linguistic Society. SUC. at Buffalo.
- . 1970. "The Segmental and Suprasegmental Phones, Phonemes and Morphophones of an Afro-American Dialect." Dissertation. SUNY at Buffalo.
- Labov, William. 1966. "Hypercorrection by the Lower Middle Class as a Factor in Linguistic Change." Sociolinguistics. Edited by William Bright. The Hague: Mouton.
- . 1963. "The Social Motivation of a Sound Change." Word. 19. 273-309.
- Levin, Saul. 1975. "Greek Occupational Terms with Semitic Counterparts." in (Makkai and Makkai).
- Lockwood, David G. 1978. "Grammatical Conditioning in Stratificational Phonology." Forum Linguisticum 2. 219-230.
- Makkai, Adam and Makkai, Valerie Becker Eds. 1975. The The First IACUS Forum 1974. Columbia S.C.: Hornbeam Press Inc.
- Malkiel, Yakov. 1978. "From Phonosymbolism to Morphosymbolism." in (Wölck and Garvin).
- Markey, T. L. 1976. "On the Generativity of Neogrammarian Linguistic Change." in (Reich).
- Markel, Norman N. and Hamp, Eric P. 1961. "Connotative Meanings of Certain Phoneme Sequences." Studies in Linguistics. 15. 47-61.
- Paradis, Michel Ed. 1978. The Fourth IACUS Forum 1977. Columbia S.C.: Hornbeam Press Inc.
- Reich, Peter A. Ed. 1976. The Second IACUS Forum 1975. Columbia S.C.: Hornbeam Press Inc.

- Smith, Henry Lee Jr. 1967. "The Concept of the Morphophone." Language. 43. 306-341.
- . 1968. English Morphophonics: Implications for the Teaching of Literacy. Monograph No. 10 New York State English Council.
- . and Sustakoski, Henry J. 1964 and 1965. A Linguistic Approach to English. 2 vols. Cooperative Research Project # 1856. Office of Education. (ERIC Nos ED021214 and ED021215).
- Sturtevant, Edgar H. 1947. An Introduction to Linguistic Science. New Haven: Yale University Press.
- Sullivan, William J. 1978. "The Enclitic Syllable in English." in (Paradis).
- . 1977. Review of On Defining the Proper Name. by John Algeo. Forum Linguisticum. 2. 79-82.
- Trager, George L. 1972. Language and Languages. San Francisco: Chandler Publishing Co.
- . 1958. Phonetics: Glossary and Tables. 27pp. Studies in Linguistics, Occasional Paper, 6. Buffalo, New York; 1964. 26 pp. 2nd. Ed. Rev.
- . and Smith, Henry Lee Jr. 1951. An Outline of English Structure 42 pp. Studies in Linguistics, Occasional Papers, 3. Norman, Oklahoma; 1956, 1957, 1959, 1961, 1962, 1965, 1966. Reprinted by American Council of Learned Societies.
- Tyma, Stephen. 1979. "Phonosymbolism, Morphosymbolism and Lexico-Semantic Constants." in (Wölck and Garvin).
- . 1978. "Relating Synchrony and Diachrony in the Analysis and Description of Language in (Paradis).
- Wescott, Roger W. 1976. "Allolinguistics: Exploring the Peripheries of Speech." in (Reich).
- . 1979. "Lexical Polygenesis: Words as Resultants of Multiple Linguistic Pressures." in Wölck and Garvin).
- Wölck, Wolfgang and Garvin, Paul L. Eds. 1979. The Fifth LACUS Forum 1978. Columbia, S.C.: Hornbeam Press Inc.

PHONETIC CONTINUA AND RELATIONAL NETWORK PHONOLOGY

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0. Introduction

It has long been suggested that phonology and phonetics are incompatible. This belief goes back to the days of phonology in the Bloomfieldian tradition. Bloomfieldian-style phonology generally described dynamic phonetics in terms of segmental phonemes or discrete, minimal entities of sound, whereas speech sounds are provably not segmentable into phoneme-sized fragments. Nor is reasonable speech mechanically produceable from strings of discrete segments. The controversy was fueled by phoneticians who possibly did not understand that the Bloomfieldians were dealing with what they saw as a useful fiction. It was also fueled by the Bloomfieldians' refusal, in most cases, to go beyond this fiction, e.g. to treat phonemic voice as a phoneme in itself.¹ It was further fueled by the insistence of at least two generative phonologists (whom I will not name) that a theory of phonology should be constructed without reference to phonetic "facts". But most of all, it has been fueled by phoneticians and phonologists who have failed to read each others' work.

In fact, phonological descriptions, whether Bloomfieldian or not, are discrete entities in themselves, and both phonetic space and the phonetic product are continuous in at least some sense(s). But this does not necessarily make the two incompatible. Rather, this fact is a reflection of nature. Consider that the contrast between phonetic space and, say, cardinal vowels parallels the contrast between a continuum like that of the light spectrum and color names or between sound pitch and scales.

The converse is also true. Motion pictures are not in motion. They are just a series of still photographs, each showing a discrete stage in the progress of a movement, projected in a discrete sequence; it is we who perceive the motion. In the limiting case, two point light sources switched on and off in sequence in a dark room are perceived as a single point light source moving along a line.

Thus, as far as nature is concerned, there is no necessary incompatibility between discrete and continuous. Discrete phonology and continuous phonetics should therefore be reconcilable.

However, actual segmental phonologies like Bloomfieldian and generative theories cannot bridge the gap between discrete and continuous. Even prosodic or Firthian phonology only made some of the steps toward bridging the gap. Without cluster and partial cluster prosodies, the full range of phonetic continuity necessary

for bridging the gap cannot be presented. Moreover, the Firthians' refusal to permit neutralization for different syllabic environments results in a proliferation of (allo)phonemes. This is an unnecessary situation, as argued persuasively in Griffen 1978.

But there are relational network phonologies around, e.g. stratificational phonology and Griffen's hierarchical phonology, which are mutually compatible, though not isomorphic. However, both these models of phonology have a fixed relational network description by which phonetic forms are encoded and decoded. The descriptions are effected in terms of relationships alone. There are no phoneme things, so they do not have segments as such. Thus, a relational network phonology should offer hope for a rapprochement between phonetics and phonology.

Conversely, the tactic patterns are still discrete groupings of relationships, still fixed. They are therefore open to the claim that they cannot produce a continuous spectrum of continuous phonetic manifestations. But I show in Sullivan 1979 that a single, discrete but generalized phonotactics produces several alternate syllabifications of the same morpheme chain. The potentialities of non-segmental relational network theories therefore deserve serious investigation of their ability to bridge the gap between discrete and continuous.

The investigation of that ability constitutes the bulk of the remainder of this study. The investigation is approached via a problem in English phonology. I use a generalized fragment of English phonotactics, applied to the encoding of a particular morpheme. I show that the phonotactic fragment encodes a spectrum of phonetic forms which are more than enough to give the illusion of a phonetic continuum. Finally, I show how the actual implementation of the logical structure of the phonotactics can produce a real continuum, given the spectrum of discrete forms which are produceable in any case. I conclude that relational network phonology is not only adequate to describe contrast and morphophonemics, but is also adequate to account for the often confusing mass of phonetic data.

I. Syllabic phonology and bananas

The potentialities of phonological description mentioned above were first suggested to me by Michael A. K. Halliday, who said, "It could in fact be argued that *banana* has only one syllable." This was a striking thought, as I had been accustomed to thinking of *banana* as a trisyllabic word.

The key here lies in the concept of dependent or (phonologically) "clitic" syllables in English, which I introduced in Sullivan 1978. The accented syllable is an independent syllable. It is followed by an "enclitic" syllable. Enclitic syllables are described in detail in Sullivan 1978. To summarize, they have a restricted sequential structure, with a limited inventory of (archi) phonemes related to its positions. The enclitic syllable must follow an independent syllable, and there are also restrictions

as to what can occur in coda position of the independent syllable. Finally, the enclitic syllable is highly sensitive to dialect, and is even missing completely in some dialects.

Now the accented syllable in *banána* must be an independent syllable. The last syllable is an enclitic syllable. The first syllable I propose to describe as a "proclitic" syllable.

Proclitic syllables are simpler than enclitics in both sequential structure and occurrence restrictions. Proclitic syllables have only one obligatory position. This obligatory position may be filled by any single consonant, which may be followed by the archiphoneme *schwa*. That is, no vowel contrast may be established here, and the vocalic position may be filled by anything which can be realized as (neutralized with) *schwa*. This vowel is optional, that is, it can be missing. When it occurs, it cannot be accented and is, moreover, 4-stress. There is another proclitic syllable type, with only a *schwa*. It is preceded by no consonant or a determined glottal stop.

The proclitic syllable has a restricted environment of occurrence. It must be followed by an independent syllable which begins with a consonant. It cannot be followed by an enclitic syllable. Finally, it is also sensitive to dialect, but that is a subject beyond the scope of this study.

These, then, are the internal constraints on the structure of the proclitic syllable and the environments it can occur in.

The proclitic syllable also has relations to higher phonotactic structures, which are easily described. The phonological word is encoded in a sequence of feet, one of which must realize the morphological (word) accent. Each foot has one independent syllable (IS), which is optionally related to (word) accent. Each IS is optionally related to a following enclitic syllable (ES), which I ignore below. Each IS is optionally related to a preceding proclitic syllable (PS). Whether a particular instance encodes a sequence of PS IS, IS ES, PS IS ES, or a sequence of two or three IS depends partly on whether the sequential constraints are met.

All these considerations, excluding the details concerning the ES, are given in figure 1 below. The ES is ignored, as it does not enter into this problem. In any case, given figure 1, I now show the logically possible encodings for the morpheme *police*.

II. Alternate encodings

In the encoding of the morpheme *police*, the sequential conditions for the ES are never met. That is, an ES with the vowel /i/ cannot be followed by a consonant. Thus all encodings of *police* are realized via IS IS or PS IS. The encodings are summarized in table 1 below.

The first encoding given, with first-syllable accent, is realized by two consecutive feet, each with one IS and no PS or ES.

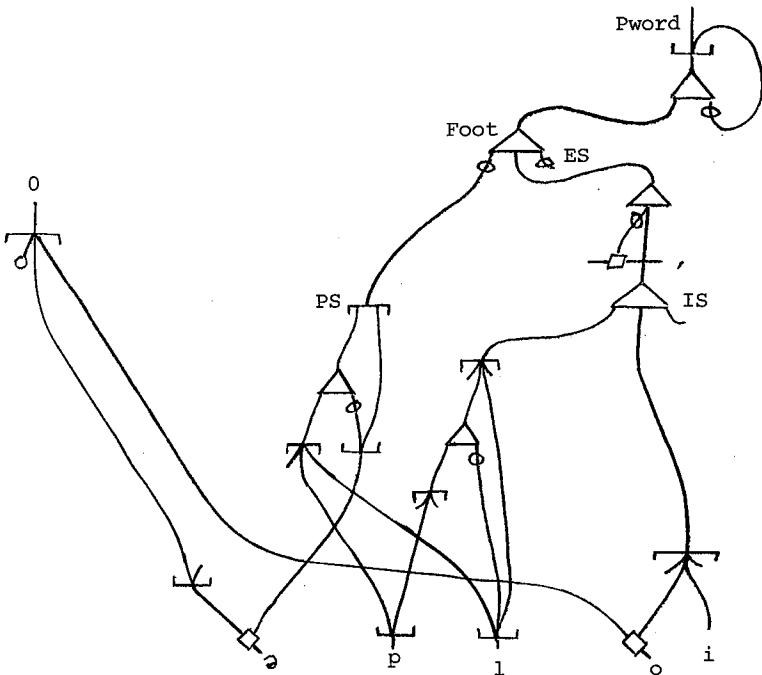


Figure 1

	Foot 1		Foot 2	
	PS	IS	PS	IS
1. [p ^h ow li:s]	-	p ^h ow	-	li:s
2. [p ^h ow lɪ́:s]	-	p ^h ow	-	lɪ́:s
3. [p ^h ə lɪ́:s]	p ^h ə	lɪ́:s	-	-
4. [p ^h lɪ́:s]	p ^h	lɪ́:s	-	-
5. [pl ^h ɪ́:s]	-	pl ^h ɪ́:s	-	-

Table 1

The first IS is accented, the second is not. All other disyllabic encodings have word accent on the second syllable. The second encoding differs from the first only by having the first IS unaccented and the second accented, but it still has two consecutive feet, each with an IS and no PS or ES. All other encodings are realized entirely within a single foot. The third and fourth encodings are realized by a PS followed by an IS. They differ only by the overt versus zero realization of the *schwa* in the PS. The fifth encoding has a zero realization of the *schwa* and fits the entire morpheme into a single IS. The fifth encoding differs from the fourth in two ways. First, the fifth encoding is phonetically shorter overall than the fourth. Second, the fourth has an aspirated [p] followed by a voiced [l]. The fifth has an unvoiced [p̥], and the entire onset cluster is aspirated.

Now given any phoneme which occurs in all five encodings, we can see a spectrum of phonetic realizations. Consider, for example, the initial p. It is realized as the aspirated, labialized onset of an accented syllable, the aspirated labialized onset of an unaccented syllable, the aspirated onset of a syllable with a neutral, non-labial vowel, the aspirated onset of a syllable with a zero (or unvoiced) vowel, followed by a voiced l, and, finally, as the initial obstruent in an obstruent-sonant onset cluster which is completely unvoiced and aspirated.

I consider the consequences of this spectrum of possible realizations below. But first I turn to a consideration of the implementation of a relational network diagram such as figure 1.

III. Implementation and Continua

Two models of implementation have been proposed for relational network phonology: a mathematical model (Lockwood 1976) and a computer/neurological analogue model (Dell & Reich 1977).

Consider first the mathematical model. Lockwood 1976 proposes a switch-matrix. The contrastive features have varying lengths of application, depending on their hierarchical dominance in the relational network description. The features are switched on during encoding and remain on until switched off. In fact, however, the exact moment of switching on or off need not be uniquely defined. That is, the time of switching on or off could be stated as a range (time $t \pm \epsilon$), with the actual moment chosen between $(t-\epsilon)$ and $(t+\epsilon)$ in any given instance being randomly controlled. This would result in an actual continuum of phonetic manifestations.

Dell and Reich call their model the spreading excitation hypothesis. It was developed to be simulable on a computer, but it is compatible with what we know about neurological networks, too. In outline, it takes a relational network description and defines what happens as a signal traces its path(s) through the network. When a signal reaches a node, it becomes partially excited. In turn, this node sends a lower-level signal to each node it is related to. These nodes become excited at a lower level than the

original node and send still lower-level signals to each of the nodes they are related to. This continues until the signal is too weak to be effective, a matter of definition in the simulation. Each time a signal reaches a node, the node's level of partial excitation increases, until it becomes fully excited. Conversely, if no further signal reaches the node within a given period of time, its excitation level decays. In this model, there are at least three distinct possibilities for introducing randomness: the percent of excitation necessary for a node to be "fully excited," the level or degree of "lesser" excitation sent to related nodes, and the rate of decay of a node's partial excitation. Again, this randomness would produce an actual continuum of phonetic manifestations from a single relational network description.

These possibilities exist and can be effected. But I wish to emphasize that research has not yet shown that it is necessary to produce a fully continuous spectrum of phonetic manifestations. Recall that we take continuous information and classify it in a digitalized manner into discrete points. We also take discrete information and deduce the existence of a continuum from it. In the limiting case, even two points of light under the proper conditions suffice to evoke the impression of a single light point moving continuously along a line. Table 1 shows that we have five points along the line of phonetic manifestations. This is substantially more than the minimum necessary. It seems likely that we would deduce a continuum here no matter what the actual situation is.

IV. Summary

I have shown that a generalized phonotactics contains all the choices necessary to produce a series of phonetic manifestations. These manifestations seem to plot into a single straight-line function. The five members of the set of phonetic manifestations suffice to account for our perception that the phonetic manifestations constitute a continuum. But at the same time, there are two models of implementation for relational network descriptions, Dell and Reich's and Lockwood's. Both these models can be implemented with the element of randomness necessary to produce a real continuum of phonetic manifestations.

Thus relational network phonology is shown to be adequate for describing phonetic data directly, and the stratificational theory of phonology is shown to be appropriate to its stated goal of accounting for the system underlying the phonetic substance.

V. Afterword

Stratificational phonology has now been shown to account for phonemic contrast, neutralization, and assimilation (Sullivan 1975), morphophonemic alternation (Sullivan 1976), allophony (Griffen 1978), generalized syllable structure and alternate syllabifications (Sullivan 1979), and the continuous nature of the phonetic substance (the present study). None of the theories of phonology

presented at the Ohio State Conference on Contrasting Theories of Phonology in 1978 can make this statement. Neither stratificational phonology nor hierarchical phonology (the only fully integrated relational network models around) was represented at that conference. This is either an interesting omission or a tacit admission of ignorance. Either way, it is a sad state of affairs which only LACUS has systematically opposed.² It should be clear that the need for an organization like LACUS is no less today than it was in 1974, when the organization was founded. This was our mission then, and so it continues today. May we successfully continue to fulfill it in the future.

NOTES

¹Hockett 1947 is a significant but lonesome exception to this statement.

²It is no accident that all the papers cited in the body of this study can be found in the LACUS Forum series.

REFERENCES

- Dell, G. S., and Reich, P. A. 1977. A model of slips of the tongue. In the Third LACUS Forum 1976, R. J. DiPietro and E. L. Blansitt, Jr. (eds.), pp. 448-55
- Griffen, T. D. 1978. The case against allophony. In the Fourth LACUS Forum 1977, Michel Paradis (ed.), pp. 484-90
- Hockett, C. F. 1947. Peiping phonology. *JAOS* 67.253-67
- Lockwood, David G. 1976. Alternatives to matrix models in phonetics and phonology. In the Second LACUS Forum 1975, Peter A. Reich (ed.), pp. 141-53
- Sullivan, William J. 1975. Alternation, transformation, realization, and stratification revisited. In the First LACUS Forum 1974, A. Makkai and V. B. Makkai (eds.), pp. 472-523
- _____. 1976. Abstractness, the syllable, and the fleeting vowel in Russian. In the Second LACUS Forum 1975, Peter A. Reich (ed.), pp. 164-80
- _____. 1978. The "enclitic" syllable in English. In the Fourth LACUS Forum 1977, Michel Paradis (ed.), pp. 451-60
- _____. 1979. Predicting ambiguous syllabification. In the Fifth LACUS Forum 1978, W. Wolck and P. Garvin (eds.), pp. 201-09

THE PHONOLOGY AND MORPHOLOGY OF BULGARIAN NOMINAL ACCENT

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0. INTRODUCTION. In comparison with the corresponding patterns of most other Slavic languages, the nominal paradigm of modern Bulgarian shows striking differences. The language has lost all case distinctions apart from the contrast of vocative and non-vocative,¹ but like its neighbor Macedonian, it has developed a definite suffix which is morphologically a part of the noun.² Table I shows full paradigms of three nouns reflecting six potentially distinct grammatical categories which make up such a paradigm, three of them in the singular and three in the plural. These paradigms are cited in transliteration apart from the accent marks.³

In discussing accentual alternations in these nominal paradigms, we can totally ignore both the vocative and the quantified plural forms, since these are either identical to the indefinite singular and plural, respectively, or are subject to perfectly regular and predictable accent patterns, in that the accent always falls on an appropriate stem syllable, and never on the inflectional desinence. Our discussion can be further simplified by the fact that we can deal with the accent of the remaining four forms in terms of just three of them: the Indefinite Singular, the Definite Singular, and the Indefinite Plural. The Definite Plural always contains an additional unstressed suffix in comparison with its indefinite counterpart, and there is no difference of accent placement between the two.

TABLE I. *Sample Paradigms of Bulgarian Nouns*

	<i>city</i>	<i>woman</i>	<i>meat</i>
<i>Indefinite Singular</i>	grád	žená	mesó
<i>Definite Singular</i>	gradó	ženáta	mesóto
<i>Vocative Singular</i>	gráde	žéno	mesó
<i>Indefinite Plural</i>	gradové	žení	mesá
<i>Definite Plural</i>	gradovéte	ženíte	mesáta
<i>Quantified Plural</i>	gráda	žení	mesá

Even these three forms, however, can display a considerable variety of accentual patterns. Let us consider, for example, the patterns of six representative nouns which use the suffixes Ø, ə, and ove for the three forms under consideration. This is the predominant pattern of suffixation for monosyllabic masculine noun stems in the language. Table II shows their accent patterns.

TABLE II. *Sample Accent Patterns for Nouns of One Inflectional Subclass*

	<i>volume</i>	<i>ravine</i>	<i>son</i>	<i>ox</i>	<i>god</i>	<i>godfather</i>
<i>I S</i>	tóm	dól	sín	vól	bóg	kúm
<i>D S</i>	tóme	dólé	siné	vólə	bógə	kumé
<i>I P</i>	tómove	dólóve	sinové	volóve	bogové	kúmove

This material shows that the language has all of the six logical possibilities, given the number of syllables available for accenting, and the fact that each word has one and only one classical-phonemic accent. This is certainly a considerable variety of accent types for a paradigm of so few forms.

1. ANALYSIS OF BASIC DATA. Viewed in terms of general typology, the accent system of Bulgarian is broadly similar to that of Russian: both languages have what is traditionally termed free dynamic accent, and the position of the accent in each language may show alternation between different members of the same inflectional paradigm. In his treatment of Russian accent, Sullivan (1969, 1970)⁴ operated with a trichotomy of accent characteristics associated with various inflectable stems: STEM STRESS -- with the accent fixed on a particular syllable of the stem; DESINENTIAL STRESS -- with the accent on the first syllable of any desinence containing a vowel, and otherwise on the last stem syllable; and LACK OF STRESS -- with the phonemic accent on the first desinential syllable marked as accentable, and otherwise on the first or only syllable of the stem.

As it turns out, we can apply the same trichotomy to some of our Bulgarian material, recognizing stem stress in items of the type of *tóm volume*, desinential stress in nouns following the pattern of *dól ravine*, and treating *sin son* and others of its type as unaccented. To facilitate the treatment of the latter type, a constant potential accent must be marked on two desinences: *M/é/* and *M/ové/*, since the unstressed stems show the phonemic accent on these desinences.

For the other patterns, Sullivan's treatment of Russian uses a partly morphological determination of accent characteristics. As it turns out, we can treat our additional types in a similar manner, recognizing in all three cases a differentiation of accent types between singular and plural forms: *vol ox* shows stem stress in the singular and desinential stress in the plural; *bog god* has a stem-stressed singular and an unstressed plural; and *kum godfather* has an unstressed singular and a stem-stressed plural. In all three cases, then, the morphological number selection serves to condition an alternation affecting accentual characteristics.

Table III shows the morphonic accent specifications needed

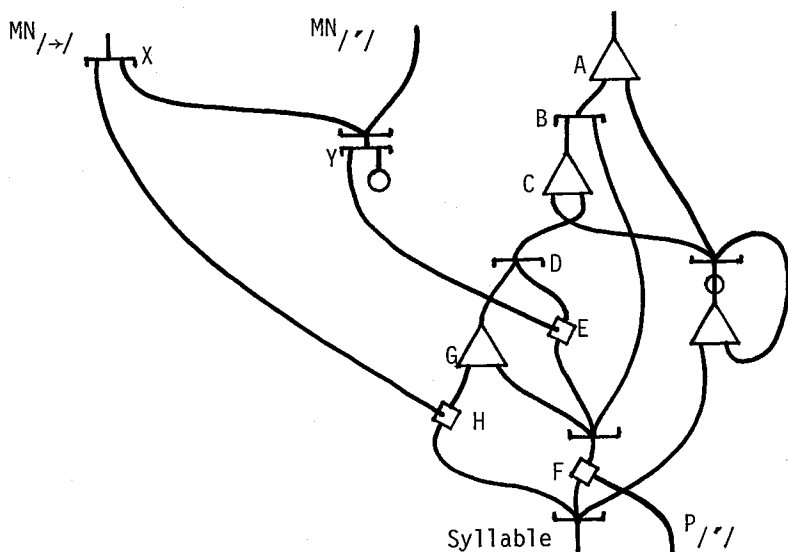
for the items under consideration. The acute accent marks a self-stressed stem or desinential element, and the rightward arrow marks post-stress, equivalent here to desinential stress, the property of a stem to require accent on the following syllable.⁵ The symbols heading each column indicate accent classes, which may be named: SELF-STRESSED, POST-STRESSED, UNSTRESSED, ALTERNATING-STRESSED, SINGULAR-STRESSED, and PLURAL-STRESSED.

TABLE III. *Morphonic Representations for Sample Paradigms.*

	S _s	S _p	S _u	S _a	S _{cs}	S _{cp}
<i>I S</i>	tóm	dól	sin	vól	bóg	kum
<i>D S</i>	tómě	dólě	sině	vólě	bógě	kumě
<i>I P</i>	tómove	dólove	sinové	vólove	bogové	kúmove

2. CATALYSIS. Given the analysis set forth in section 1, the phonology shown in Figure 1 is required to deal with the placement of the actual accent phonemes. This system is designed to handle three situations: (1) where a word is marked with just one morphonic accent, (2) where a word has two or more morphonic accents, and (3) where a word has no morphonic accent mark. In the first situation, the single accent signaled from the morphology will be either MN/'/ or MN/+/ . A signal from MN/'/ will result in the activation of the nodes A B C D E F in the phonotactics, producing an accent on the syllable for which the morphology indicates it. A signal from MN/+/ , on the other hand, will activate the nodes A B C D G H F, which will

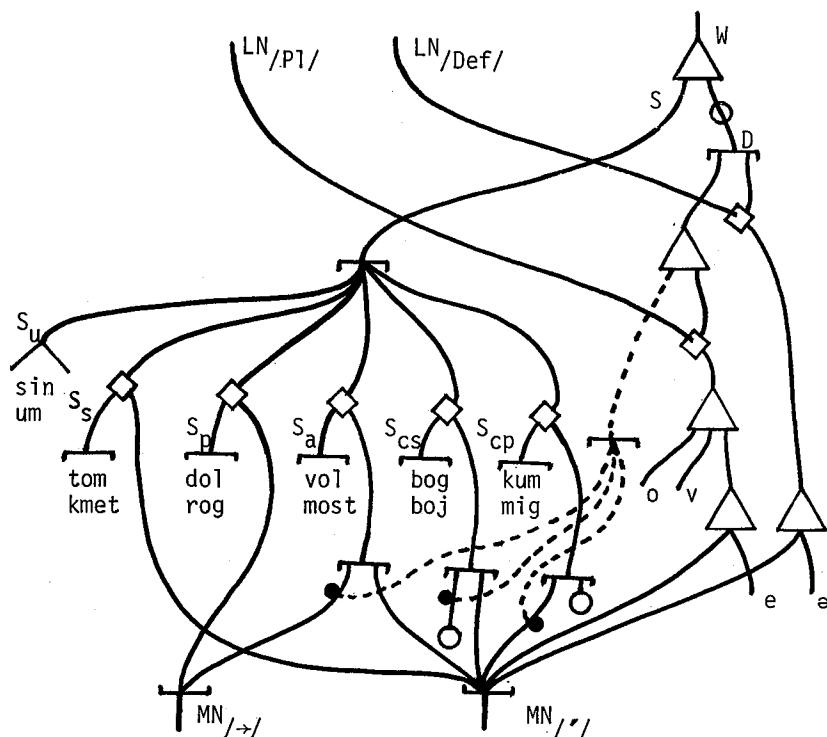
FIGURE 1. *Realization of Accents in Bulgarian Phonotactics.*



produce no accent on the post-stressed syllable, but will specify an accent on the next syllable. If the absence of a following syllable in the phonological word precludes this possibility, the node marked X will allow post-stress to be realized on its own syllable, in the same way as MN/'/. In the case of multiple morphonic accents, the first accent signaled will be realized as described above, but any subsequent accent will be realized as zero at the node marked Y. Finally, in the absence of any accent morphon at all, the phonology will activate the nodes A B F, resulting in an automatic initial accent.

Figure 2 presents the morphology associated with this proposed treatment. The task of this structure is to provide for the proper assignment of morphons of accent, together with the necessary inflectional desinences. The basic structure shows a word (W) divided into stem (S) and optional desinence (D). All stems in this material take the same desinential forms, realized by the morphemic signs MS/š/ and MS/ově/, but the stems must be subclassified according to their accent characteristics. The six stem classes are labeled as in Table III. In order to fully justify the presence of a downward OR-node, an additional member of each class is shown in this presentation.⁶

FIGURE 2. *Assignment of Accent Morphons in Bulgarian Morphotactics.*



3. ALTERNATIVE POSSIBILITIES.

The system outlined above achieves the correct positioning of phonemic accent by a combination of morphemic and phonemic alternation. Morphemic alternation is used when particular stems have accent differences dependent on the contrast between singular and plural forms, while phonological alternation is used to resolve potential conflicts between multiple or null morphonic accents and the need for one and only one phonemic accent per phonological word, as well as to distinguish between self-stress and post-stress.

Quite obviously, this particular approach is by no means the only conceivable way of dealing with data of this sort in a stratificational model. Indeed, two alternative approaches appear more obvious at first glance, and each in its own way is conceptually purer than what is proposed above. This section sketches these alternatives and compares them with the proposed treatment for simplicity.

The first alternative entirely avoids morphological accent alternations by full exploitation of the possibility of assigning accent morphons of differing abstract strengths to various stems and desinences. The phonological portion of such a system must then deal with the circumstances under which the various accent morphons are subject to overt vs. zero realization. Table IV shows the morphonic accents which the phonology would have to associate with the realized accents presented in Table II.⁷

TABLE IV. *Morphonic Accents for an Alternative Treatment Making Maximum Use of Phonological Alternation.*

<i>I S</i>	tóm	dől	sin	vől	bög	kùm
<i>D S</i>	tómě	dőlě	sině	vőlě	bögě	kùmě
<i>I P</i>	tómôvě	dőlôvě	sinôvě	vőlôvě	bögôvě	kùmôvě

The second alternative seeks to exploit the device of morphological conditioning as fully as possible, and thus to treat all accentual alternation as a morphological rather than a phonological matter. This approach results in a more complex morphology combined with a simpler phonology. Such a treatment has the effect of assigning the accents shown in Table II directly in the morphology, so that morphonic accents are in one-to-one correspondence with phonemic accents.⁸

In Table V, the relative simplicity of the three alternatives is compared. This comparison shows that the initial approach, using both morphemic and phonemic alternation, results in a simpler treatment than either the approach based on phonemic alternation alone or the approach relying solely on morphemic alternation.

TABLE V. *Comparison of Simplicity Counts for Three Alternative Treatments of the Bulgarian Accent Data.*

	MORPHOLOGY	PHONOLOGY	TOTAL
Phonemic	22 + 7 = 29	35 + 13 = 48	57 + 20 = 77
Morphemic	47 + 8 = 55	6 + 3 = 9	53 + 11 = 64
Phonemic + Morphemic	29 + 11 = 40	16 + 3 = 19	45 + 14 = 59

KEY: Each equation of the form $A + B = C$ indicates the number of nodes (A) plus the number of extra connections (B) and the total of these (C).⁹

4. EXTENSION TO FURTHER DATA.

The treatments compared deal with only one major nominal class of Bulgarian, but the examination of further data shows that the principles used for this account can be adapted to the accentual patterns of other noun classes as well. The other major patterns differ in the details of their desinences, but their accent patterns are just further instances of the same ones already treated. Consider the material in Table VI, which shows accentual varieties of three additional major classes. Each of the major patterns shown there has only two or three different types of accentuation, and only one of them, that found in *aso ace* requires any resort to morphological conditioning.¹⁰

TABLE VI. *Accentual Varieties of Bulgarian Nouns of Other Major Classes.*

	<i>bone</i>	<i>candle</i>	<i>grandmother</i>	<i>woman</i>
<i>Ind Sg</i>	kóst	svěšt	bába	žená
<i>Def Sg</i>	kosttá	sveštá	bábata	ženáta
<i>Ind Pl</i>	kósti	sveští	bábi	žení
	<i>lasso</i>	<i>meat</i>	<i>ace</i>	
<i>Ind Sg</i>	láso	mesó	áso	
<i>Def Sg</i>	lásoto	mesóto	ásoto	
<i>Ind Pl</i>	lása	mesá	asá	

Table VII shows the morphonic representations of these accentual patterns along the same lines as are found in Table II for the initial data. In addition to self-stress, post-stress, lack of stress, and conditioned singular-stress on various stems, this treatment specifies an accent on the singular feminine definite suffix *ta* and on the neuter plural suffix *a*, in order to provide for the proper accentuation of morphonically unstressed stems. Table VIII summarizes the occurrence of the six accent types in conjunction with the four major classes of nominal in-

flection which have been treated here.

TABLE VII. *Morphonic Accents for Additional Bulgarian Nominal Data.*

	S _u	S _p	S _s	S _p
<i>Ind Sg</i>	kost	svěšt	bába	žěna
<i>Def Sg</i>	kosttá	svěšttá	bábatá	žěnatá
<i>Ind Pl</i>	kosti	svěšti	bábi	žěni
	S _s	S _p	S _{cs}	
<i>Ind Sg</i>	lás	měso	ás	
<i>Def Sg</i>	lásoto	měsoto	ásoto	
<i>Ind Pl</i>	lásá	měsá	asá	

TABLE VIII. *Association of Declension Types with Accent Types in Bulgarian Nouns.*

<i>Declension Types</i>	I	II	III	IV
<i>Accent Types</i>				
S _s	tóm		báb	lás
S _p	dól	svěšt	žen	mēs
S _u	sin	kost		
S _a	vól/vól			
S _{cs}	bóg/bog			ás/as
S _{ca}	kum/kúm			

Since this additional material presents no really new patterns, the phonology shown in Figure 1 is still adequate to deal with it. The morphology of Figure 2 obviously needs to be expanded to deal with the different desinences in the new material, but its treatment of accent placement will still be along the same lines already sketched.

5. COMMENTARY.

5.1 UNACCENTABLE DESINENCES.

It was noted in the introductory section that the vocative singular and the quantified plural, when they have forms distinct from the simple indefinite singular and plural in the

first place, can never take an accent on their desinential vowels, regardless of the normal accent characteristics of the stems with which they are associated. Inasmuch as they do not serve to define any accentual varieties within the various paradigms, these additional forms could safely be ignored in our earlier discussion. Ultimately, however, both the phonology and the morphology must be organized in such a manner as to guarantee the correct accent placement in all forms. The present discussion is intended to clarify the place of these affixes in the overall system.

Most important is the fact that the phonology of Figure 1 must be modified in order to deal with these affixes. In the system sketched there, a morphonically accented suffix will be phonemically accented when there is no previous accent in the same word. Further, a suffixal vowel in the first syllable after the stem, whether morphonically accented or not, will be phonemically accented when it follows a post-stressed stem. In view of this, it will not do to simply mark no morphonic accent on the unaccentable suffixes of the vocative and quantified plural. If we did this, we would incorrectly get desinentially accented forms such as **dɔlɛ* and **dɔlɛ* rather than the correct *dɔlɛ* and *dɔlɛ* from a desinentially-stressed stem such as ^{MN}/dɔlɛ/. Here we need some kind of mark indicating the unaccentability of these affixes. In theory, this mark could be either a special boundary setting off an unaccentable enclitic portion of the phonological word, or a special accent morphon of unaccentability. The question of which is preferable will be left open pending a fuller examination of Bulgarian phonology and morphology.

5.2 THE TREATMENT OF DESINENTIAL STRESS. Our proposed treatment of desinential stress in terms of the morphon of post-stress (^{MN}/→/) differs from the approach used by Sullivan, who simply places an ordinary stress following the stem to represent this phenomenon. Sullivan's treatment assumes that the phonology will automatically accent the preceding vowel when no following vowel is available for accentuation. If correct, this assumption would simplify the phonological portion of our solution. Since it is not completely clear that a performance model based on the relational network will automatically lead to the desired solution, the more fully explicit alternative has been adopted here as a matter of caution.

5.3 THE TYPOLOGICAL PLACE OF BULGARIAN ACCENT. Lockwood 1979 gave formalizations of several accent systems termed QUASI-AUTOMATIC following Garde 1968. Several suggestions for the typological classification of these and related systems were also presented. The present commentary considers how the Bulgarian system outlined in this paper fits into that typology.

Bulgarian accent as treated here,¹¹ and the similar Russian system treated by Sullivan, resemble quasi-automatic accent systems in having a phonotactics which provides some accents as

realizations of morphons, and others as phonologically determined elements. The Bulgarian and Russian systems differ from such quasi-automatic systems as those of Polish and Macedonian, however, in the relative statistical predominance of the determined and non-determined accents: determined accents are relatively uncommon in these systems, while they predominate in the types termed quasi-automatic.

In order to accommodate both the similarities and the differences involved, it is proposed that the basic typological trichotomy be that of AUTOMATIC, PARTLY AUTOMATIC, and NON-AUTOMATIC. These three can be characterized wholly in terms of phonotactic structure. Then, within the partly automatic category, one could recognize a cline ranging from QUASI-AUTOMATIC to QUASI-NON-AUTOMATIC based on the relative statistical predominance of determined vs. non-determined accent. Bulgarian and Russian would then have partly automatic accent systems of the quasi-non-automatic subtype. Further investigation of accent systems on a broad scale would be needed to determine whether the actual systems are more or less scattered along this scale, or whether they tend to cluster at two or more points along it.

NOTES

¹Written Bulgarian also has a distinction between a nominative and an accusative in the definite forms of some nouns. This difference can be ignored in a treatment of the spoken language, since the written forms involved are homophonous.

²The definite article is a morphological suffix, but it should probably be treated as a separate word in the lexology, since it pertains to an entire phrase, and can sometimes be attached to an adjective rather than a noun. Compare the forms: *kniga* a book, *knigata* the book, *nova kniga* a new book, and *novata kniga* the new book.

³This practice allows the reader to ignore various alternations not pertinent to the matter at hand. See Lockwood 1972, Problem 6B.3 on page 244 for an example of further alternations. Aronson 1968 and Lord 1962 have been the principal sources of data for this paper. The existence of accent variants in the standard language is beyond the scope of this paper.

⁴Sullivan's work is a stratificational adaptation of theories presented in lectures by Bulcsu Laszlo in the late 1960's.

⁵In Lockwood 1979 a leftward arrow (←) was used for a pre-stressed syllable--one requiring accent on the syllable before it--in Polish, Macedonian, Latin, and Turkish.

⁶The additional examples used are *um* mind, *kmet* village head, *rog* horn, *most* bridge, *boj* battle, and *mig* moment.

⁷The various accent marks are used quite arbitrarily to distinguish elements of different realizational and conditioning behavior, and should not be taken to have any inherent phonetic in-

terpretation. This is, of course, in line with the usual practice in stratificational theory.

⁸Full phonologies and morphologies comparable to those of Figures 1 and 2 are presented in an appendix to the handout for the oral paper. They can be obtained on request from the author.

⁹For a discussion of the stratificational simplicity measure used here, see section 3.7 of Lockwood 1972.

¹⁰Taken by itself, *aso* could have been treated more simply as an unstressed stem taking an automatic initial accent whenever it did not combine with an accented desinence. Examination of the total class of which it is an example, however, shows a number of polysyllabic examples with non-initial accent, making the present treatment necessary. (Cf. Aronson 1968:135-36.)

¹¹This assumes that the system applied to the nominal material in this paper will be adaptable to the language as a whole, just as the similar Russian system is applicable to that language. A brief examination of the verbal inflection, the other major area of accentual alternation, seems to indicate that this is the case, though the details remain to be worked out.

REFERENCES

- ARONSON, Howard I. 1968. *Bulgarian inflectional morphophonology*. The Hague: Mouton.
- GARDE, Paul. 1968. *L'accent*. Paris: Presses Universitaires de France.
- LOCKWOOD, David G. 1972. *Introduction to stratificational linguistics*. New York: Harcourt Brace Jovanovich.
- _____. 1979. On quasi-automatic stress systems. *The Fifth LACUS Forum, 1978* (Wölck and Garvin, eds), pp. 214-223. Columbia: Hornbeam.
- LORD, Albert Bates. 1962. *Beginning Bulgarian*. The Hague: Mouton.
- SULLIVAN, William J. 1969. A stratificational description of the phonology and inflectional morphology of Russian. Unpublished dissertation, Yale University.
- _____. 1970. Russian stress: specification and realization. Unpublished manuscript.

ASPECTS OF REFLEXIVE/RECIPROCAL EXPRESSIONS IN HOPI

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0. Introduction

This paper discusses certain aspects of reflexive/reciprocal (R/R) expressions in Hopi, a Uto-Aztecan language of northern Arizona. Table I presents some examples of the type of expression to be examined.¹ The R/R marker occurs as a prefix on the verb

Table I: Some reflexive/reciprocal expressions in Hopi.

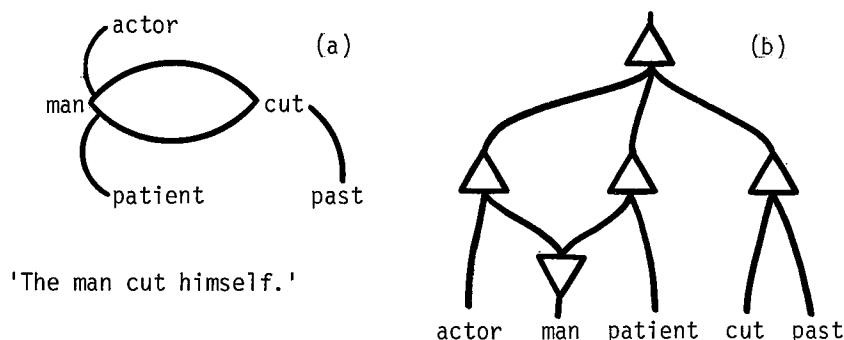
<u>Hopi</u>	<u>Gloss</u>
nu' naa=tuwa 1-SG R/R=saw(SG)	'I saw myself.'
itam naa=tutwa 1-PL R/R=saw(PL)	'We saw ourselves.' 'We saw each other.'
nu' na=tku 1-SG R/R=cut(SG)	'I cut myself.'
itam na=tkuya 1-PL R/R=cut(PL)	'We cut ourselves.' 'We cut each other.'
nu' naa=pa'angwa 1-SG R/R=helped(SG)	'I helped myself.'
itam naa=pa'angwaya 1-PL R/R=helped(PL)	'We helped ourselves.' 'We helped each other.'
SG: singular	
PL: plural	
R/R: reflexive/reciprocal	

stem, the vowel of this prefix being subject to a phonologically-conditioned length alternation which will not be discussed here. Neither will we discuss the internal structure of the verb stem, since it is not directly relevant to our main interest. Being primarily interested in relationships at the lexotactic level and above, it is to this subject that we now turn.

1. The semo- and lexotactic structure of R/R expressions

Within the stratificational camp, Gleason (1964) proposes an intuitively satisfying solution to the semological structure of

Figure 1: Gleason's proposal for the reflexive in English and a corresponding diagram in the current network notation.



the reflexive in English. His treatment, shown in Figure 1(a), involves simultaneous assignment of the semantic roles ACTOR and PATIENT to a participant in a proposition. Gleason's diagram can be converted quite straightforwardly into the network notation now in use among many stratificationists; one such "conversion" is shown in Figure 1(b). Here, the upward AND explicitly indicates that the man is both ACTOR and PATIENT.

The upward AND has been used in several stratificational accounts of semo- and gnostological phenomena where a participant is related to more than one role in a proposition or discourse (e.g., Müller 1978 and Johannesson 1980). Indeed, Sullivan (1977, 1978) has argued that the lack of an upward AND-type relationship in the axiom set of transformational-generative theory is a serious deficiency.

Actually, the use of referential indices by some transformational linguists is in some sense analogous to the use of upward ANDs. The use of indices to account for reflexives is discussed in Sampson (1969), where he examines certain transformational treatments which derive a reflexive sentence (1) from an underlying expression (1'). Here, referential indices are used to

(1) The teacher hates himself.

(1') the teacher_j hates the teacher_j

indicate the coreferentiality of the two occurrences of 'the teacher.' In the transformational analysis being examined by Sampson, the fact that the two noun phrases in (1') have the same referent allows the second to be deleted and replaced with a reflexive pronoun, yielding (1). In the case of sentence (2), from underlying (2'), deletion and reflexive pronoun insertion cannot

(2) The teacher hates the teacher.

(2') the teacher_j hates the teacher_k

apply because the two occurrences of 'the teacher' refer to different individuals, as shown by the different indices in (2').

Sampson concedes the apparent usefulness of indexing, but criticizes it on two grounds. First,

...the addition [of referential indexing--MEB] to the general theory of language seems disproportionately costly in relation to the problem it is introduced to solve. For it is fairly obvious that the indexing device cannot be restricted to cases where it is needed to distinguish identical from, as it were, homophonous noun-phrases. If 'the teacher' is a referential item in 'the teacher hates himself' and 'the teacher hates the teacher,' then it must equally be a referential item in 'the teacher sold the car,' 'Mary likes the teacher,' and infinitely many other sentences where no possibility of ambiguity arises. In fact, almost every noun-phrase must be indexed. (p. 2)

The second objection, which is the more important to Sampson, hinges on the fact that the use of referential indices can introduce a large measure of arbitrariness into the treatment of reflexives. In discussing underlying structures such as (3),

(3) the teacher_j hates my landlord_j

he writes:

Suppose that, in some given situation, we know that 'the teacher' is 'my landlord'; that is, that the reference of the phrase 'the teacher' is the same as that of the phrase 'my landlord.' Then surely it is quite arbitrary, so far as the semantic component is concerned, to say that 'the teacher hates himself' derives from 'the teacher_j hates the teacher_j' rather than from 'the teacher_j hates my landlord_j?' But TG [transformational-generative--MEB] theory is forced to allow only the first of these derivations; the derivation from 'the teacher_j hates my landlord_j' has to be ruled out because it would violate the principle of recoverability of deleted elements. In fact, Chomsky leaves it quite unclear what status deep structures of this latter type have, where the two noun-phrases have the same index but different lexical items; but of course they will greatly outnumber the deep structures in which the two noun-phrases are fully identical. (p. 3)

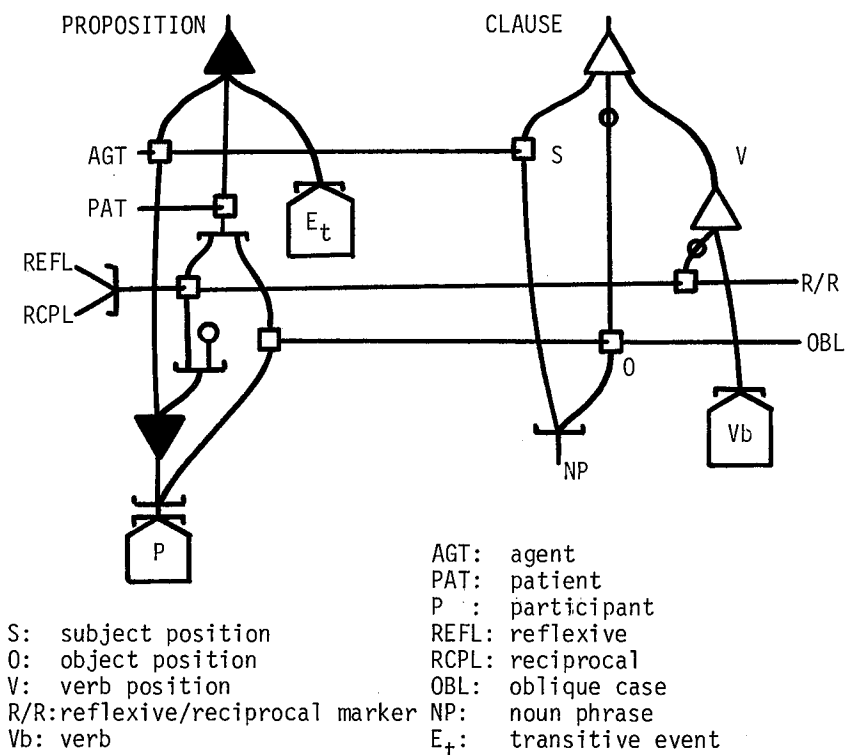
Sampson's proposal for dealing with reflexive sentences avoids the problems discussed above through the use of an underlying structure such as (4), where the index *j* denotes an entity which may have any number of possible lexicalizations: 'the teacher,'

(4) j hates j

'Mr. Jones,' 'my former landlord,' and so on.

The semotactic analysis of R/R expressions in Hopi suggested in this work combines elements of both Gleason's simultaneous role assignment approach and Sampson's indexing approach; the result is Figure 2, which also shows the connection of the semotactics to the lexotactics.² The semotactic portion of the figure depicts a

Figure 2: The semo- and lexotactic configurations for R/R expressions in Hopi.



PROPOSITION consisting of a participant marked with the semological role AGENT (corresponding to Gleason's ACTOR) which is associated with both a transitive event (E_t) and a participant which functions as the PATIENT of the event. The upward AND in the figure indicates that the participant which serves as the AGENT may also serve as the PATIENT. This need not be the case, however, and the zero option on the upward ordered OR is meant to ensure that the upward AND can succeed in the event the AGENT and PATIENT are not coreferential. It is the upward AND that is analogous to a referential index in that it indicates that the AGENT

and the PATIENT are the same, whatever the further semotactic structure of that participant may be. Figure 3, for example, illustrates a complex participant, 'man and woman.'

The downward ordered OR immediately under the PATIENT node indicates that coreferentiality of the AGENT and PATIENT is a marked situation. If coreferentiality obtains, the left-hand line of this OR will be taken, resulting in a surface clause with a subject (S), a verb (V) with the R/R affix, but no surface object (O). If the AGENT and PATIENT participants are different, the right-hand line of the ordered OR in the semotactics is taken, which results in a surface clause with a subject, an object marked with the oblique case (OBL), and a verb without the R/R affix.

In the treatment proposed here, the concepts REFLEXIVE (REFL) and RECIPROCAL (RCPL) syncretize just above the semotactics, so that there is only one Hopi sememe which realizes them. This should not strike us as particularly odd, for as Langacker (1976) states,

Reflexive and reciprocal constructions are semantically similar, especially in the plural (singular reciprocals are a contradiction in terms). Both involve coreference of subject and object, and they differ only in the way in which the verbal relationship is distributed among the members of the set designated by these arguments. With reflexives, the members of the set act collectively on the set as a whole, as in Figure III, or each member acts upon himself, as in Figure IV. With reciprocals, the relations are skewed, as shown in Figure V, despite the identity of the overall sets involved.

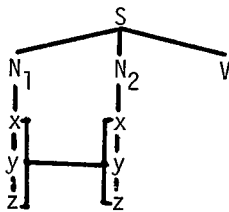


Figure III

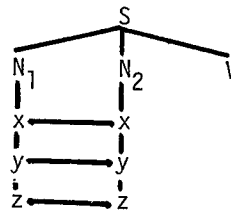


Figure IV

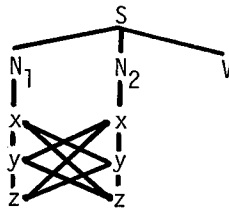


Figure V

Languages can get by without these subtle semantic distinctions if need be, or can mark them in some other manner (e.g. with reflexive pronouns); thus many languages use the same verbal affixes to mark reflexive and reciprocal relationships. (p. 48)

According to Langacker, Proto Uto-Aztecan had both a reciprocal prefix and a set of reflexive prefixes (analogous in function to English myself, yourself, and so on), but the semantic similarity between the concepts of reflexivity and reciprocity lead to the breakdown of the proto system and the subsequent development of a variety of systems in the daughter languages. Some lost the reciprocal prefix, the reflexive(s) then taking on an additional, reciprocal meaning. Others, among them Hopi, lost the reflexive prefixes; the prefix which once expressed only a reciprocal meaning then acquired a reflexive meaning as well. Thus the two-concept/one-sememe situation in Hopi is the result of a diachronically "normal" simplification of the more complex proto system of reflexive and reciprocal prefixes.³ At this point, let us now examine the two concepts REFL and RCPL and their relationship to the gnostology.

2. The gnostological properties of REFL and RCPL, with an excursus on "discourse processing"

In recent years, a number of stratificational linguists (e.g. Makkai 1980, Johannesson 1980, Davis and Copeland 1980, and Copeland and Davis 1980) have begun to explore what might be termed "discourse processing," that is, the activity hypothesized to occur in an individual's conceptual system and the manner in which such activity relates to language in the production and interpretation of discourse.⁴

The work of Copeland and Davis is perhaps the most explicit with respect to discourse processing within a stratificational framework. For example, in Copeland and Davis (1980) they write:

A predication may be viewed as the gnostological realize of a semological proposition. In a conversation, a speaker's purpose is to bring the addressee to identify and access certain items of information stored in the gnostology and to modify it in some way... The performance of discourse thus involves the speaker's affecting changes within the gnostology of the addressee, either by way of activating (making conscious) nections [the basic unit of the gnostology--MEB] already stored in the gnostology; of constructing nections with specified properties; or of establishing relations (connections) between such nections... A gnostological predication could thus be seen metaphorically as an instruction by the speaker for the addressee to activate/construct/connect nections in the gnostological store. (p. 258, their emphasis)

That we should have to recognize processes of this type should not surprise us; even the utterance of a single word may serve as an "anchor" to some bit of a hearer's experience which was not previously in his consciousness, but which he can rapidly evoke through some internal operation. Lockwood (1972) makes essentially the same point:

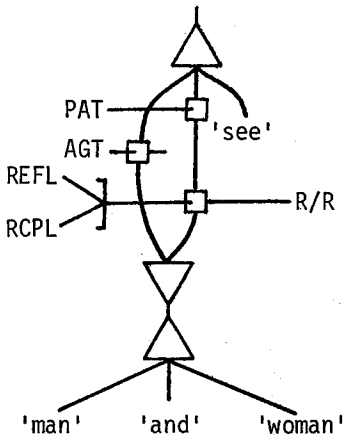
The concept "dog" for a speaker of English, for example, may involve visual impressions as to the appearance of various dogs in one's experience, auditory impressions as the other characteristic noises made by dogs, olfactory impressions as to the smell of a dog, tactile impressions as to the feel of a dog's nose and coat, and other, often idiosyncratic impressions based on individual experience, all of them combining and correlating to make up the total concept. (p. 2)

If this type of activity is involved in "understanding" a single concept, as Lockwood suggests, how much more complex must be the processes involved in encoding and decoding multi-concept utterances? It is exactly this issue which the researchers cited above (and others) are investigating.⁵

In line with the preceding remarks on discourse processing, we suggest that REFL and RCPL be interpreted as instructions to the addressee to modify his conceptual system as illustrated by the following example. Let us assume that the addressee has just heard sentence (5) and that he has constructed the sememic trace

- (5) taaqa nōq wuuti naa=tuwa
 man and woman R/R=see(SG)
 'The man and woman see each other.'
 'The man and woman see themselves.'

Figure 3: The sememic trace for (5).

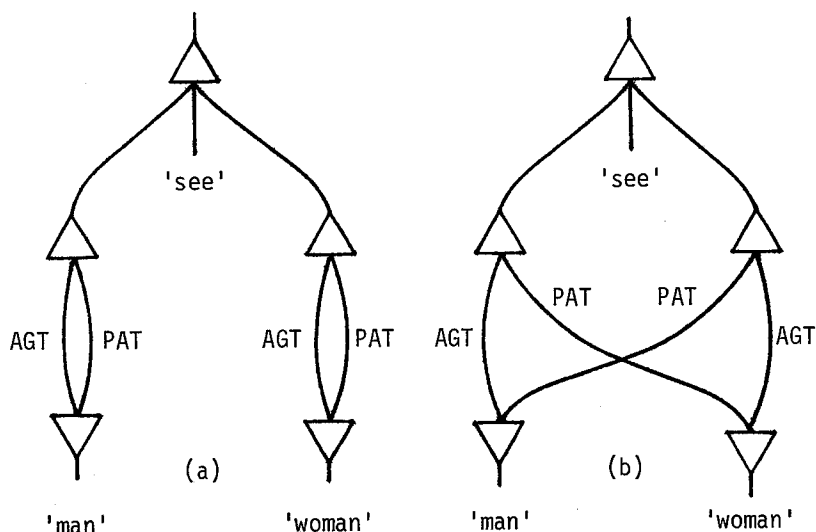


shown in Figure 3.⁶ The R/R prefix indicates coreferentiality of the AGENT and PATIENT participants and their association with either REFL or RCPL.

If REFL is chosen, the addressee constructs a gnostological configuration equivalent to that in Figure 4(a), in which the man and woman act upon themselves. If RCPL is chosen, a configuration equivalent to that in Figure 4(b) is formed, indicating that the man and woman act on each other.⁷

For the speaker, the mapping of an event onto a gnostological configuration of the type in Figure 4(a) generates a token of REFL; if the event is mapped onto

Figure 4: Gnostological configurations constructed according to REFL (a) and RCPL (b).



a configuration of the type in Figure 4(b), a token of RCPL occurs. REFL and RCPL are not collapsed into a single concept because the speaker and addressee are presumably able to perceive the difference, despite the presence in Hopi of only one sememe to express them. Indeed, the complex sentence (6) is a possible alternative encoding for the situation in which the man and woman act on each other, and not on themselves.

- (6) taaqa wuutit tuwa nōq wuuti taaqat tuwa
 man woman(OBL) saw(SG) and woman man(OBL) saw(SG)
 'The man saw the woman and the woman saw the man.'

3. Conclusion

In this work we have briefly examined certain reflexive/reciprocal expressions in Hopi and how they might be handled in a stratificational framework involving a "static" semotactics coupled with a "dynamic" gnostology, that is, one which can be modified in accordance with principles related to discourse processing. Despite the fact that various details (not all of which are trivial) have been left unexamined for lack of space and/or tenable solutions, we hope to have made a contribution to both the study of Hopi and to the continuing development and refinement of stratificational theory.

NOTES

1. The data are based on information found in Kalectaca (1978)

and Langacker (1976).

2. Of course, many details are left unspecified here. For a further look at some of the semo- and lexotactic phenomena of Hopi, see Bennett (1980) and (1981).
3. The use of the particle *nahoy* may possibly force the reciprocal reading of an otherwise ambiguous sentence (Langacker 1976: 76, 77). Until its exact effect is determined, however, we prefer to retain the two-concept/one-sememe treatment adopted here.
4. The realm of the "discourse processes" to be discussed in this section is limited to the gnostology (conceptual system) of the individual, which is not part of his linguistic system *per se*, although the two are closely linked. For this reason, such "processes" should not be confused with the deletion, movement, and rewrite rules of transformational-generative theory, which are allowed at all levels of linguistic structure. It is hoped that the reader is sufficiently familiar with stratificational theory to make extensive discussion of this point unnecessary in this work.
5. Levy (1979) presents a discussion of discourse processing which, while different in approach from the works of Makkai, Johannesson, and Davis and Copeland, is nonetheless stratificational in spirit. For an account of the relation between language and internal experience as developed by researchers in a non-stratificational framework, see Grinder and Bandler (1976: 3-9) and Grinder, DeLozier, and Bandler (1977: 11-19).
6. The subject of sentence (5) is dual, and hence requires the singular verb form; for details, see Bennett (1980).
7. Note the similarities in structure between our Figures 4(a) and (b) and Langacker's Figures III, IV, and V shown above. The details of role assignment have been omitted, since it is not clear to us how semological roles are related to discourse processes in the gnostology and vice versa. Moulton and Robinson (1981) discuss certain problems attendant to "case theories" of meaning, and propose suggestions for their solution; some of their suggestions may ultimately be incorporable into stratificational theory.

REFERENCES

Bennett, Michael Eric

- 1980 Aspects of Grammatical Number in Hopi. The Sixth LACUS Forum 1979 (William C. McCormack and Herbert J. Izzo, eds.). Columbia, SC: Hornbeam Press.
- 1981 Aspects of the Imperative in Hopi. The Seventh LACUS Forum 1980 (James E. Copeland and Philip W. Davis, eds.). Columbia, SC: Hornbeam Press.

- Copeland, Jame E. and Philip W. Davis
 1980 A Stratificational Approach to Discourse and Other Matters. The Sixth LACUS Forum 1979 (William C. McCormack and Herbert J. Izzo, eds.). Columbia, SC: Hornbeam Press.
- Davis, Philip W. and James E. Copeland
 1980 Knowledge, Consciousness, and Language: Some Possible Sources of Discourse Phenomena. Papers in Cognitive-Stratificational Linguistics (James E. Copeland and Philip W. Davis, eds.). Rice University Studies, Vol. 66, No. 2, Spring 1980.
- Gleason, H.A., Jr.
 1964 The Organization of Language: A Stratificational View. Monograph Series on Languages and Linguistics 17. Washington, D.C.: Georgetown University Press.
- Grinder, John and Richard Bandler
 1976 The Structure of Magic, Volume II. Palo Alto, CA: Science and Behavior Books.
- Grinder, John, Judith DeLozier, and Richard Bandler
 1977 Patterns of the Hypnotic Techniques of Milton H. Erickson, M.D., Volume II. Cupertino, CA: Meta Publications.
- Johannesson, Nils-Lennart
 1980 On Fictive Sentence Analysis. Papers in Cognitive-Stratificational Linguistics (James E. Copeland and Philip W. Davis, eds.). Rice University Studies, Vol. 66, No. 2, Spring 1980.
- Kalectace, Milo
 1978 Lessons in Hopi. (Ronald W. Lanacker, ed.). Tucson: University of Arizona Press.
- Langacker, Ronald W.
 1976 Non-distinct Arguments in Uto-Aztecan. University of California Publications in Linguistics 82. Berkeley and Los Angeles: University of California Press.
- Levy, David M.
 1979 Communicative Goals and Strategies: Between Discourse and Syntax. Syntax and Semantics, Volume 12: Discourse and Syntax. New York: Academic Press.
- Lockwood, David G.
 1972 Introduction to Stratificational Linguistics. New York: Harcourt Brace Jovanovich.
- Makkai, Adam
 1980 Periods of Mystery: Or Syntax and the Semantic Pause. Papers in Cognitive-Stratificational Lin-

guistics (James E. Copeland and Philip W. Davis, eds.). Rice University Studies, Vol. 66, No. 2, Spring 1980.

Moulton, Janice and George M. Robinson

1981 The Organization of Language. New York: Cambridge University Press.

Müller, Ernst-August

1978 Funktionsverbgefüge vom Typ "Give a Smile" und ähnliche Konstruktionen: Eine textorientierte Untersuchung im Rahmen eines doppelschichtigen Semantikmodells. Kasseler Arbeiten zur Sprache und Literatur, 3. Frankfurt am Main: Peter Lang.

Sampson, Geoffrey

1969 Noun-phrase Indexing, Pronouns, and the 'Definite Article.' Linguistic Automation Project Report, New Haven: Yale University.

Sullivan, William J.

1977 Comments on Chu's Review of Nilsen. Forum Linguisticum 1(3): 265-268.

1978 Raising: A Stratificational Description and Some Metatheoretical Considerations. The Second Annual Linguistic Metatheory Conference Proceedings (James P. Wang, ed.). East Lansing: Michigan State University Department of Linguistics.

III

GENETIC LINGUISTICS

LINGUISTIC MIXTURE IN THE KENSINGTON RUNIC INSCRIPTION

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Ever since the discovery of the notorious Kensington (Minnesota) rune-stone in 1898, its authenticity has been called into question, and denied by almost all philologists who have paid any attention to it. (For a detailed discussion of the problems, cf. Hall [forthcoming-a]; for the history of the debates, cf. Hall [forthcoming-b].) One of the major objections raised against the inscription has been that its language was not "pure" Old Swedish. For instance, Moltke (1951) condemned the dative form **þenna stæn** 'this stone' on the grounds that it should properly have been ***þessaum steini**. Of all the discussants, William Thalbitzer (1946/47:34-35) and Sivert N. Hagen (1950:340) have been the only ones to recognize that the text contains evidence of language-mixture (as might, indeed, be expected if the group consisted of 8 Swedes and 22 Norwegians) and can therefore not be judged faulty on puristic grounds. It is my intention here to discuss the evidence for language-mixture in the text, and its philological and sociolinguistic implications. My discussion will follow the usual analytical divisions into phonology, inflection, syntax, and semantics.

1. PHONOLOGY.

A. The form **frælsæ** (runes 151-157) 'preserve' has a West Norse ending in **-æ**, as pointed out by Hagen (1950:336). "Proper" Old Swedish should have had **-a**. It has been alleged (e.g. by Wahlgren [1958:37]) that whoever forged the inscription could easily have gotten this word for 'preserve' from the earlier Swedish versions of the Lord's Prayer given in Rosander (1882; reproduced by Wahlgren [1958: Fig. 25, between pp. 146 and 147]), of which the farmer Olof Öhman had a copy. Yet none of the versions given by Rosander ends in **-e**. The earliest (fourteenth century) has **frælsæ**. The question has rightly been asked by Hagen (1950:336): where would a late nineteenth-century Swedish immigrant farmer have gotten an Old West Norse form in **-æ**? On the other hand, the presence of this form is consonant with the assumption of Norwegian influence in the **κονή** of a mixed group of explorers in the fourteenth century, who were transcribing their own speech directly. A further indication that they were doing so is afforded by the extra **æ** (rune 153) — not found in any of Rosander's versions — which Hagen (1950:340) rightly explained as a transitional sound.

B. The word **uphagelærfarh** (runes 21-33) 'discovery-voyage' is the only word in the text for which a mediaeval attestation has not been found. It has been severely criticized (e.g. by Jansson [1949]; Moltke [1951]) as a flagrant modernism, since — we are told — *att opdaga* 'to discover' was not introduced into Swedish, as a borrowing from Low German, until the seventeenth century, and furthermore the very concept of 'voyage of discovery' was not thinkable before the Renaissance (Flom [1910]). To this objection, the answer has been given (Hagen [1950:330-332]) that it was perfectly possible for the root /*opdag-*/ to have been borrowed at any time, even well before its first attestation. Another point, which Hagen does not mention, is that the second element of the compound, **farh** 'voyage', is a West Norse non-umlauted form which is attested in Old Icelandic, but was archaic even in the fourteenth century. (The normal umlauted form is /*færd*/.)

C. The forms **en** and **æfen** are undiphthongized, pointing to origin in the region on the border between Västergötland and Norway (Bohuslän), reaching up as far as Oslo (as pointed out by Kwamme [1965]).

2. INFLECTION.

A. Early critics of the inscription (e.g. Professor Breda of Minnesota and Professor Rygh of Norway) thought that **nf** (runes 44-45) was a crude borrowing from English, and that **frn vinlanh nf weat** (runes 34-49) meant 'from western Vinland'. This seemed to make no sense: who ever heard of 'western Vinland'? It is now recognized that **nf** means 'over', as it does in Old Icelandic, and the phrase is best rendered 'from Vinland over the west', or 'westward from Vinland'. In this phrase, **nf** is definitely a West Norse feature, as pointed out by Hagen (1950:340).

B. The form **illy** was earlier thought to be another crude Anglicism, since modern Swedish has *ondo* for 'evil'. But Holand (1962:99-100) has cited an Old Norwegian folk-song from Telemark with the refrain *Å Gud o Maria möy / hjälpe oss o frälse oss alle av illy* 'O God and Virgin Mary, help us and preserve us all from evil'. Here we have another Norwegianism, in inflection and in lexicon.

3. SYNTAX.

A. The use of singular verb-forms with plural subjects (e.g. **wi hæpe**, runes 50-55, 'we had'; **wi war**, runes 95-99, 'we were') has been considered by almost all critics of the inscription's authenticity to be an anachronism and hence a sure indication of forgery. Yet Holand (1940:294-297) and Hagen (1950:333) have cited instances of such constructions attested in fourteenth-century documents. Admittedly, such instances are rare, but it should not occasion surprise that features of colloquial speech are not represented in formal documents such as saints'

lives and law-codes. In the every-day speech of the members of a miniature *Koloniallandschaft*, such simplification would be all the easier.

B. The form **hena** 'this' is attested in certain Upplandic runic inscriptions, only following the noun **sten** 'stone' in the function of direct object of the verb **raiste** 'raised': **raiste sten hena** 'raised this stone'. In the Kensington inscription, however, in both of its occurrences (runes 87-90 and 210-214), it modifies a noun which is the object of the preposition **fra(m)** 'from' and is hence in the dative. Such dative use is attested in a manuscript from 1342, cited in the form **thenno** by Noreen (1904: § 509, Anm. 8) — who, however, simply lists it as 'neuter singular' without quoting the context in which it occurs.

The dative use of **hena** is important for both the nineteenth- and the fourteenth-century history of the inscription. It has been pointed out by Hagen (1950:338) that the use of **hena** as a dative was not generally known to the scholarly world until the publication of Noreen (1904). Hagen asks rhetorically: "How did our forger happen to hit upon the form **thenno**? Did he perhaps find it in some old text that was available to him but not to scholars generally? He could not have got it out of Noreen's *Altschwedische Grammatik*, for this was not yet published."

For the fourteenth century, its presence is evidence that the form **hena** was being used in connection with, not only neuter, but also masculine and feminine nouns — in other words, as a generalized dative. This is a normal enough development in dialectally mixed groups, where at least slight levelling and merger of inflectional and syntactic patterns takes place. A modern parallel (one of many) is the generalization of the plural ending *-i* in the Italo-American of the late nineteenth and early twentieth centuries, in such plurals as *pezzi* 'pieces of money, dollars' instead of *pezze*, sg. *pezza* (Menarini [1947:163-164]).

4. SEMANTICS. The Norwegian folk-song cited above is important in another respect, the semantic. The objection has been raised (by Jansson [1949:396]) that no Catholic would ever think of praying to the Virgin Mary to preserve him from evil, and that this "fact" is another bit of evidence proving that a modern Protestant must have fabricated the inscription. The mediaeval Norwegian refrain is evidence to the contrary. Not only mediaeval Scandinavians, but modern Italian Catholics make such prayers, as I have myself seen on broad-sides pasted on church-walls in Italy. If anything, a late nineteenth-century Swedish Lutheran would have been unlikely to think of ascribing such a prayer to his fictitious mediaeval group.

5. CONCLUSION. The sociolinguistic implications of these considerations seem clear. Among the speakers of modern Swedish in Douglas County, Minnesota, in the 1890's, there seems to have

been no-one who can be shown to have had the recondite philological knowledge that would have been necessary to concoct an inscription with the linguistic peculiarities that the Kensington stone manifests. A fourteenth-century group, on the contrary, consisting of Swedes and Norwegians, would have, in the normal course of events, influenced each others' speech, in just such ways as are attested here. The linguistic mixture present in the Kensington inscription is one of a number of features which, when taken together, furnish cumulative evidence indicating that it is perhaps 98 percent likely that the stone is genuine.

REFERENCES

- Flom, George T. 1910. The Kensington rune stone. *Transactions of the Illinois State Historical Society* 1910.105-125.
- Hagen, Sivert N. 1950. The Kensington runic inscription. *Speculum* 23.321-356, with plates opposite pp. 321, 332.
- Hall, Robert A. Jr. Forthcoming-a. The Kensington rune-stone is genuine. To be published by Hornbeam Press, Columbia, S.C.
- . Forthcoming-b. The philological debates over the Kensington rune-stone. To appear in *Homenaje a Ambrosio Rabinales* (Santiago de Chile).
- Holand, Hjalmar Rued. 1940. Westward from Vinland: an account of Norse discoveries and explorations in America, 962-1362. New York: Duell, Sloan and Pierce. (Reprinted under title "Norse discoveries and explorations in America, 962-1362," New York: Dover Books, 1969.)
- . 1962. A pre-Columbian crusade to America. New York: Twayne Publishers.
- Jansson, Sven B. F. "Runstenen" från Kensington i Minnesota. *Norsk Tidskrift för Vetenskap* NS.25.377-405.
- Kvamme, Torvald. 1965. Is the Kensington stone genuine or is it not? In J. Kr. Tornøe: *Columbus in the Arctic?* 125-130 (Oslo: Bokcentralen).
- Menarini, Alberto. 1947. *Ai margini della lingua*. Firenze: Sansoni. (Biblioteca di Lingua Nostra, no. 8.)
- Moltke, Erik. 1951. The Kensington stone. *Antiquity* 25.87-93.
- Noreen, Adolf. 1904. *Altschwedische Grammatik*. Halle/S.: Niemeyer.
- Rosander, Carl. 1882. *Den kunskapsrike Skolmästaren*. Revised edition (originally published 1854). Stockholm: Bonnier.
- Thalbitzer, William. 1946/47. To fjærne runestene fra Grønland og Amerika. *Danske Studier* 43.1-40. Translated under title "Two runic stones from Greenland and Minnesota," *Smithsonian Miscellaneous Collections* 116:3.1-71 (1951).
- Wahlgren, Erik. 1958. *The Kensington stone: a riddle solved*. Madison, Wisconsin: University of Wisconsin Press.

LEXICOSTATISTICAL TREE RECONSTRUCTION INCORPORATING BORROWING

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1. Introduction

In the early 1950's, Swadesh and Lees introduced a model of language change based on a vocabulary turnover process analogous to radioactive decay. It was claimed that a test-list of N meanings could be constructed which are culture-independent. For this so-called Swadesh-list of core vocabulary items, one could calculate a universal constant R , the rate of morpheme decay, from languages with a well-documented history. Let $n(t)$ be the number of words at time t still cognate to the word at t_0 (i.e. words unchanged since t_0). From the differential equation

$$(1) \frac{dn(t)}{dt} = -Rn(t)$$

and the boundary condition

$$(2) n(t_0) = N,$$

we have the solution

$$(3) n(t) = n(t_0)e^{-R(t-t_0)} = Ne^{-R(t-t_0)}.$$

Thus the *time depth*, or elapsed time since t_0 , is given by

$$(4) t-t_0 = -\frac{1}{R} \ln \frac{n(t)}{N}.$$

For a pair of languages evolving independently, the time depth since the pair split is

$$(5) -\frac{1}{2R} \ln \frac{n(t)}{N}.$$

This formula was widely employed for glottochronological calculations (for an extensive list, see Embleton 1981a:100-101, Embleton 1981b:53-64), until glottochronology got a bad name and virtually ceased to be an area of active research in the late 1960's.

2. Improvements to Swadesh's Basic Model

Meanwhile, a few researchers, mostly mathematicians (e.g. Brainerd, Dobson, D.Sankoff), continued to work on improving the glottochronological method. Unfortunately for linguistics, most of this work was published in mathematical and statistical journals only. Avoiding all the details of the development, I shall just present the equations which more or less represent the culmination of their efforts, D.Sankoff's (1973) *fully parametrized lexicostatistics*.

$$(6) E\left(\frac{C}{N}\right) = [1+\gamma\theta-\gamma-\theta] [1+2\beta(t-\kappa)]^{-\alpha} + \gamma + \theta - \gamma\theta$$

and

$$(7) \text{ M.L.E.}(t) = \frac{\left(\frac{1-\gamma-\theta+\gamma\theta}{\frac{C-\gamma-\theta+\gamma\theta}{N}} \right)^{\frac{1}{\alpha}} - 1}{2\beta} + \kappa$$

where C = number of cognates

α , β are parameters of the Γ -distribution of replacement rates (Sankoff)

γ = probability of chance recurrent cognation (Brainerd)

κ = drift constant (Gleason)

θ = borrowing probability.

Note that $\lim_{t \rightarrow \infty} \text{M.L.E.} \left(\frac{C}{N} \right) = \gamma + \theta - \gamma\theta$; in other words, as the elapsed

time increases, our estimate of t depends exclusively on chance cognation and borrowings.

At this point, even the mathematicians gave it up, usually with laconic parting remarks like 'the mathematics become considerably more complicated' (Sankoff 1973).

3. Incorporating Borrowing Rates

One of the persistent concerns in the construction and revisions of the test-list was the elimination of all meanings susceptible to borrowing. This caused the list to shrink from 215 words to 100, and was also one of the causes of a lot of the disillusionment with glottochronology. It is not clear that *any* meanings exist which are completely immune to borrowing, especially in situations of large-scale language contact. This fact, coupled with the considerable statistical advantages of a longer test-list, shows that lexicostatistics must find a way to incorporate borrowing rates. This involves reconstructing a geography as well as a history for the family tree.

Sankoff attempted to do this in 1972, but in a theoretical application to biological taxonomy where N was infinite. I decided to try out his theoretical result in a more practical linguistic case, where N is (very) finite (e.g. $N=200$). To do this, I undertook an extensive computer simulation of the language change process for a language family of 10 present-day languages. This is large enough to be interesting, without being so large as to become unmanageable. In what follows, r is the replacement rate and b is the borrowing rate.

First of all, we must simulate the splitting of the language family, adding a geographical dimension to the genetic tree. Thus each language has a geographical counterpart, or *country*. We start with one country, which splits at time 0. One of these splits after a random time (exponential with parameter 2) between any two points on its border. Then one of these splits after a random time (exponential with parameter 3), and so on, until just before the eleventh split is due. Meanwhile, linguistic divergence along the branches is simulated. After a random time (exponential with parameter $2N(r+b)$), a *change event* occurs. To determine whether this should be a replacement or a borrowing, we choose

$x \in (0,1)$. If $x \leq \frac{r}{r+b}$, we have a replacement, and if $x > \frac{r}{r+b}$, we have

a borrowing. For a replacement, we choose one of the n languages at random, then one of the N meanings at random, and replace the word by a totally new one. For a borrowing, we choose at random one of the languages to be the borrowing language, then one of its neighbours to be the lending language, then which of the N meanings is to be borrowed, and finally copy the appropriate word from the lending language to the borrowing language. These processes are also continued until just before the eleventh split is due to occur. At this point, data generation is stopped. Cognate percentages for each pair of languages are calculated, and the final geographical configuration is printed out.

The next step is to attempt to reconstruct the family tree from these cognate percentages and the final geographical configuration only. Sankoff 1972 gives the equations

$$(8) \quad \frac{dS_{XY}}{dt} = -\beta_{XY}S_{XY} + \alpha_{XY} \quad \text{for each pair of languages } X \text{ and } Y,$$

$$\text{where } \alpha_{XY} = b \left\{ \frac{1}{k_X} + \frac{1}{k_Y} \right\} + \frac{b}{k_X - 1} \sum_{Z \in N_{X-Y}} S_{YZ} + \frac{b}{k_Y - 1} \sum_{Z \in N_{Y-X}} S_{XZ}$$

$$\text{and } \beta_{XY} = 2r + \alpha_{XY} + \frac{b}{k_X - 1} \sum_{Z \in N_{X-Y}} (1 - S_{XZ}) + \frac{b}{k_Y - 1} \sum_{Z \in N_{Y-X}} (1 - S_{YZ}),$$

with the added restriction that when X and Y are not neighbours, α_{XY} and β_{XY} are as above, but without the term $b \left\{ \frac{1}{k_X} + \frac{1}{k_Y} \right\}$.

In the above, N_X is the set of neighbours of X , k_X is the number of neighbours of X , and S_{XY} is the similarity of X and Y

measured per unit (i.e. cognate percentage divided by 100). Unfortunately (or maybe fortunately because it causes massive simplification of the equations), there are some major errors in these equations. Omitting the derivation (which can be found in Embleton 1981a:105-107 or in full detail in Embleton 1981b:72-78), I shall simply state that the corrected version is

$$(9) \quad \frac{dS_{XY}}{dt} = -2rS_{XY} + \frac{b}{k_X} \sum_{Z \in N_X} (S_{YZ} - S_{XY}) + \frac{b}{k_Y} \sum_{Z \in N_Y} (S_{XZ} - S_{XY}).$$

Equation (9), which really represents a whole set of differential equations, allows one to reconstruct the topology of the family tree, and, incidentally, all the time depths as well.

4. Results of Simulation

4.1 N=200

Sankoff and Dobson (1971), in a similar experiment with $N=200$, but with a less general splitting process, used a different reconstruction method (hierarchical cluster analysis), which cannot incorporate a borrowing rate into the reconstruction algorithm. They reconstructed 55% topologically correct trees

when $b=0$, but this percentage rapidly approached 0% as b increased. My results (for each value of b , averaged over the five values of r) are given in the first row of Table 1. There were 20 runs for each (r,b) pair; thus each entry in the table represents the results for 100 simulation runs.

Table 1 % topologically correct

	b=0	b=4	b=8	b=12	b=16	b=24	b=30
N=200	55	50	45	40	40	30	30
N=500	65	60	60	55	50	45	35
N=100	40	35	35	30	25	20	15

It is evident that accuracy decreases as b increases, but only slowly if b is incorporated into the reconstruction algorithm. To relate this to natural language, r is generally considered to be about 19 (% per 1000 years) and b much lower (15 would be extremely high).

Unfortunately, this simple measure of percentage topologically correct is also simplistic; it fails to distinguish degrees of error for incorrect trees. Some trees have minor errors (i.e. involving a node low in the tree) whereas some have very major ones (i.e. involving a node high in the tree), and we need a measure to reflect this. For this purpose, I have adapted (for details of the adaptation, see Embleton 1981b:86-90) a coefficient used in biological taxonomy to measure degree of agreement between trees (see Sokal and Rohlf 1962). It is called the *cophenetic correlation coefficient* (CCC), and measures agreement of topology and branch lengths between trees. My results are given in the first row of Table 2.

Table 2 CCC

	b=0	b=4	b=8	b=12	b=16	b=24	b=30
N=200	.99	.985	.98	.975	.965	.955	.93
N=500	.9975	.993	.9875	.98	.975	.96	.94
N=100	.975	.97	.96	.955	.94	.92	.895

These are extremely high values for a correlation coefficient, showing that a high degree of accuracy, both in the topology and in the branch lengths, can be obtained, even for values of r and b considerably higher than those found in natural languages.

Often one is interested in the topology of the tree only, and not at all in the actual branch lengths. In order to evaluate only the topological accuracy of the reconstruction, I have constructed a third measure, called the *topological similarity coefficient* (TSC) (full rigorous derivation of the TSC can be found in Embleton 1981b:92-97). My results are given in the first row of Table 3.

Table 3 TSC

	b=0	b=4	b=8	b=12	b=16	b=24	b=30
N=200	.965	.95	.93	.925	.92	.89	.88
N=500	.975	.97	.95	.945	.935	.92	.885
N=100	.92	.92	.91	.885	.87	.86	.845

Again, these are extremely high values for a correlation coefficient. The greater range of values for the TSC as compared to the CCC is expected because the TSC is designed to be particularly sensitive to the degree of severity of the topological error encountered.

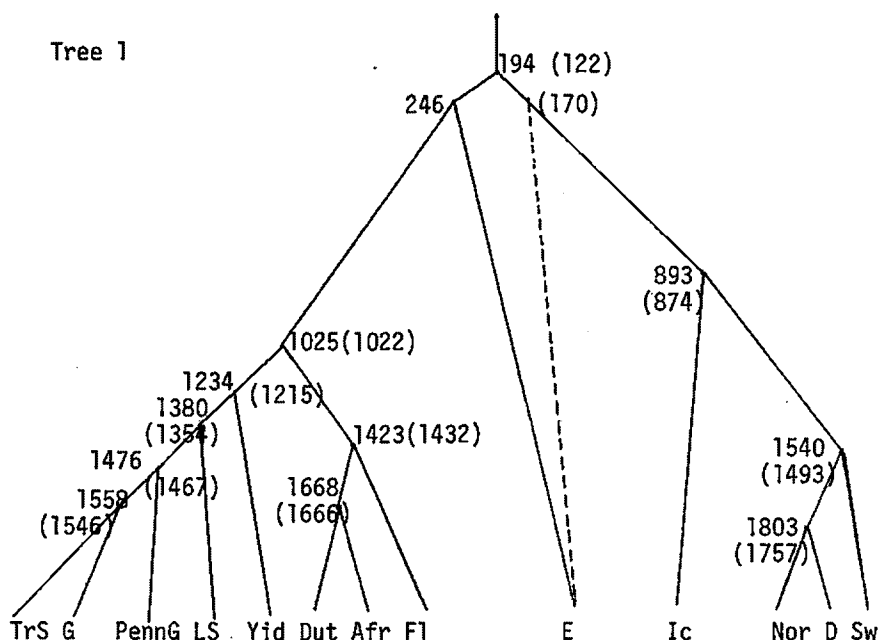
4.2 Other values of N

The simulation was also performed for N=500 and for N=100. These results are given in the second and third rows (respectively) of the preceding tables. As before, each entry in the table represents the results for 100 simulation runs. Comparing results for N=500 with those for N=200, we see that the accuracy is slightly better, but not sufficiently so to be worth the additional trouble in practical application (i.e. two and a half times as much effort spent in collection of word-lists, and even more than two and a half times as much time in making and coding cognateship decisions). However, comparison of the results for N=100 with those for N=200 indicates that the accuracy is considerably worse for N=100. Thus the conscientious investigator must prefer a 200-word list to a 100-word list.

5. Germanic Results

The results so far are essentially theoretical in nature, indicating that the reconstruction problem is at least *mathematically* solvable, even for high values of r (up to 30% per 1000 years) and of b (up to 30% per 1000 years). As a partial test of the *practical* usefulness of such a reconstruction algorithm, the method was applied to 13 present-day Germanic languages, using an additional 9 historically-attested Germanic languages for rate estimations. The Swadesh 200-word list was used, for both practical reasons (some lists were already available; Arndt, p.c. 1979 and Costello 1980) and theoretical considerations (see section 4 above). In contrast to the simulation experiments where a single value of r and a single value of b were used in each run throughout the entire language family, the value of r was allowed to vary between languages and the value of b was allowed to vary between language pairs, entailing the replacement of r by r_{ij} and b by b_{ij} in Equation (9). The values of r_{ij} and b_{ij} ($i, j \in \{1, 2, 3, \dots, 13\}$) were estimated using available historical information. It should be noted that b_{ij} , the rate at which language j borrows from language i , is not necessarily equal to b_{ji} , since borrowing patterns are often asymmetric.

The application of the reconstruction algorithm to the Germanic data yielded Tree 1 below. The topology of the tree



obtained is in accord with widely-held and commonly accepted views of the evolution of the Germanic language family. The dates obtained also accord reasonably well with known historical facts, such as the date of the settlement of Iceland (874 A.D.). The fact that our algorithm correctly dates the split of Icelandic from the other north Germanic languages is particularly important and satisfying, because Icelandic has frequently been cited as an example of the failure of lexicostatistics (e.g. Bergsland and Vogt 1962). A complete discussion of the accuracy of the reconstruction with respect to both topology and dates can be found in Embleton 1981b:147-172.

Previous lexicostatistical methods did not incorporate borrowing into the reconstruction process. We can see how successful these methods would be when applied to the Germanic family by using our reconstruction algorithm with all b_{ij} set to zero. The tree obtained is indicated in Tree 1 by the dates in parentheses and by the dotted lines (where the topology differs from that obtained with the non-zero borrowing rates). The most important and striking problem with the tree so obtained concerns the placement of English. The tree reconstructed without incorporating borrowing rates incorrectly places English with the north Germanic languages, contradicting known historical facts. This is because English has a large number (16) of Scandinavian borrowings within the 200-word list, which are incorrectly assumed by such a method to be 'common inheritance', rather than

borrowings, thus placing English unduly close to the Scandinavian languages. This demonstrates conclusively the necessity of incorporating borrowing rates. Thus the reconstruction algorithm presented in this paper represents a significant improvement over previous methods, and shows that lexicostatistical methods *can* be successful when applied to real linguistic data, even when a large amount of borrowing has taken place.

ABBREVIATIONS

r	replacement rate
b	borrowing rate
ln	natural (Napierian) logarithm
E	expectation (expected value)
MLE	maximum likelihood estimator
TrS	Transylvanian Saxon (Mediasch region of southern Transylvania)
G	German (standard)
PennG	Pennsylvania German
LS	Low Saxon (Hamburg dialect)
Yid	Yiddish
Dut	Dutch
Afr	Afrikaans
Fl	Flemish
E	English
Ic	Icelandic
Nor	Norwegian (Riksmål)
D	Danish
Sw	Swedish

REFERENCES

- Bergsland, Knut, and Hans Vogt. 1962. On the Validity of Glottochronology. *Current Anthropology* v3n2:115-153.
- Brainerd, Barron. 1970. A Stochastic Process Related to Language Change. *Journal of Applied Probability* 7:69-78.
- Costello, John R. 1980. A Lexical Comparison of Two Sister Languages: Pennsylvania German and Yiddish. *Pennsylvania Folklife* v29n3:138-142.
- Embleton, Sheila M. 1981a. Lexicostatistical Tree Reconstruction Incorporating Borrowing. *Toronto Working Papers in Linguistics* 2:98-122.
- Embleton, Sheila M. 1981b. Incorporating Borrowing Rates in Lexicostatistical Tree Reconstruction. unpublished PhD thesis, University of Toronto.
- Gleason, H.A.Jr. 1959. Counting and Calculating for Historical Reconstruction. *Anthropological Linguistics* 1:22-32.
- Lees, Robert B. 1953. The Basis of Glottochronology. *Language* 29:113-127.
- Sankoff, David. 1972. Reconstructing the History and Geography of an Evolutionary Tree. *American Mathematical Monthly* 79:596-603.
- Sankoff, David. 1973. Mathematical Developments in Lexicostatistic

- Theory. in *Current Trends in Linguistics*, ed.T.Sebeok.
v11:93-113.
- Sankoff, David, and Annette J.Dobson. 1971. Word Replacement,
Borrowing and the Phylogenetics of Language Families.
(unpublished) Centre de recherches mathématiques, Université
de Montréal.
- Sokal, Robert R., and F. James Rohlf. 1962. The Comparison of
Dendrograms by Objective Methods. *Taxon* v11n2:33-40.
- Swadesh, Morris. 1950. Salish Internal Relationships. *IJAL* 16:
157-167.
- Swadesh, Morris. 1952. Lexico-statistic Dating of Prehistoric
Ethnic Contacts. *Proc. Am. Phil. Soc.* 96:452-463.

A TECHNIQUE FOR DATING OLD ENGLISH POETIC TEXTS

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The dating of individual Old English poetic texts and the chronological ordering of the entire corpus have proven to be difficult for diverse reasons. For almost all of the poetic record, a single Late West Saxon copy exists of each poem, each said to be a copy of an earlier copy or copies of the original text. The extant texts contain very little indisputable evidence to indicate composition dates, original dialects, and authors. However, multiple attempts have been made to abstract tentative dates by examining various variables within a text and comparing them to those in other texts, using some linguistic variables, but mostly non-linguistic ones. As a result, the assigned dates given in the literature are approximate with some more approximate than others. The tentative character of the dating has also prohibited establishing a definite chronology for the poetry.

The editorial dating has been derived from analyses of scanty, archaic, phonological, morphological, and lexical forms primarily (although replacement forms have also been used at times), metrical and alliteration patterns of lines, and the alliterative form of the entire poem, with comparison and contrast of these to other poems followed by correlation to cultural factors and a few known historical dates. Most analyses are based on the frequency of use of one feature as found in multiple poems, with correlation to the line count of each poem. The number of occurrences of one form in relation to the number of lines may be a misleading statistic in that the content may not permit the use of a specific form. Therefore, the sparseness of a feature may not be significant when compared to line count. Usage of one form in proportion to the usage of its competing form(s) may be a more powerful statistic.

The confusion found in the literature regarding dating of the entire corpus is clearly illustrated by the following summation of current thought for Dream of the Rood relative to the assigned date and the rationales for this date. Krapp (1932, xxxix-xl) considers that "certain similarities of phrasing...connect the runic inscription[s] on the Ruthwell Cross...[and] on the Brussels Cross with the poem, the plausible assumption being that these inscriptions were extracted from the text of the poem". This suggests that the Late West Saxon poem existed prior to the

I wish to thank James A. Holloway, Department of Management Systems and Sciences, Southern Illinois University at Edwardsville, for his expert help in verifying my statistical approach, in preparing Figures 2-5, and in writing up the statistical results.

construction of the two crosses and that the crosses have approximately the same date. Krapp does not assign a date to either cross. However, Dobbie (1942, cxviii-cxxv) dates the Ruthwell Cross "sometime in the first half of the eighth century" on the basis of linguistic evidence, the use of runes, and the plant and animal ornamentation on the cross, and the Brussels Cross in the eleventh century on the basis of the linguistic evidence and the epigraphy and ornamentation on the cross. This suggests that the Brussels Cross inscription derives from the Late West Saxon Dream of the Rood (entirely possible), although this connection is not made by Dobbie. However, he avers a close relationship between the Ruthwell Cross inscription and Dream of the Rood, with the poem being a "translation from a Northumbrian original, generally assigned to the pre-Cynwulfian period". He considers it "most probable that [the original] poem antedates the cross inscription, and that the carver who cut the inscription took his text, with some changes, directly from the poem". Conversely, Dickens and Ross (1934, 18) and Schücking (1927, 28) suggest that the extant Late West Saxon Dream of the Rood is a later revision of the early Northumbrian original. Textual examination suggests that the extant poem could well be a liberal and original adaptation with expansion of the Ruthwell Cross text, a continuing oral tradition, or both, and not necessarily a translation of an earlier, separately written poem. Little evidence exists to support the hypothesis that it is a translation. Excellent historical accounts of the dating procedures, the variables, and the results of many investigators can be found in Widsið (Chambers, 1965, 166-186), Beowulf (Klaeber, 1950, lviii-cii), each "Introduction" to the six volume Anglo-Saxon Poetic Records, and in various editions of individual poems.

Any analysis of Old English poetry has to take into consideration the demands the poetic structure places on word order and the determination by poetic form of syntactic form. The poetic form in its half-line, metrical, and alliteration requirements can affect syntactic order without a doubt. By the time of Old English, the poetic form was fixed, but the language was changing typologically so that sometimes the form dictated the syntax, e.g., the SVO auxiliary + main verb order, when line final, becomes main verb + auxiliary because of poetic form requirements; other times the new forms affected the poetic form, e.g., the occurrence of a clause with SVO word order with its medial verb does not permit the verb to be both line final and clause final. This is clearly shown in a comparison of Judith and Beowulf where, in Judith, the verb is often b-line final but clause medial, while, in Beowulf, the dominant relationship is b-line final and clause final. Although the poetic form could affect placement of constituents, and did, in relation to other constituents, the language had to permit such placement in the first place.

Even though the poetic constraints have to be considered, textual dates need to be based on linguistic features and not on a mixture of linguistic features and other factors such as style, poetic form, cultural and historical background, or an assumed

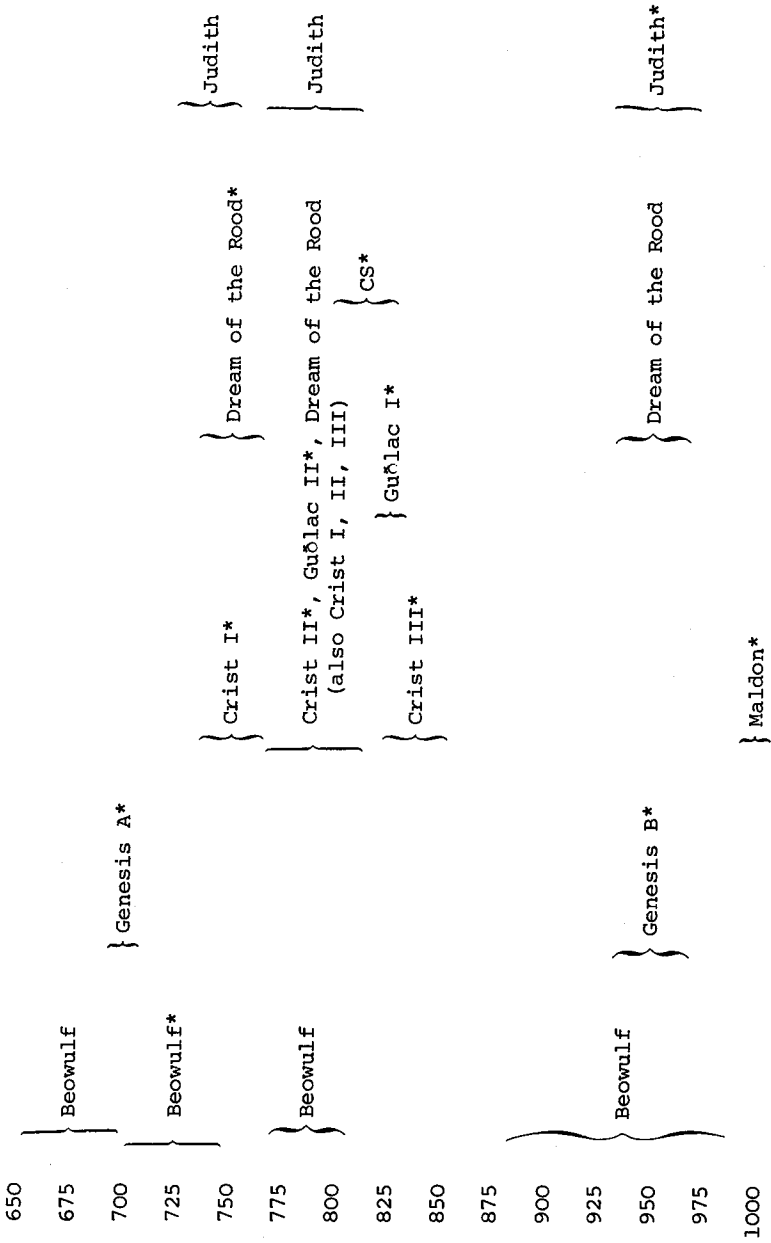


Figure 1: Dating of Each Text as Reported in the Literature (*most commonly accepted date)

organic unity of content (although these can provide corroborative evidence). The linguistic transition as revealed by the examination of multiple pairs of competing features should be more reliable than historical and cultural evidence (which most often lack specific dates), analysis of style, and the logical development of content. This is particularly pertinent in the case of poems which have been dated according to an assumed logical development of content, e.g., Crist I, Crist II, and Crist III, which appear to be three poems organized around a single theme, so that if the content of the three poems is considered logically, Crist I precedes Crist II, and Crist II precedes Crist III. This logical organization of the three poems has been assumed by some authorities to indicate that the poems were composed in this order (reinforced by the fact that the poems, although not titled, follow this sequence in the Exeter Book. The reverse could just as readily be argued by following the format of the "fire and brimstone" preacher who begins his sermon with damnation, goes into the mechanism(s) of salvation, and then concludes with showing how salvation can be attained.

The current confusion regarding dating and chronology is clearly shown on Figure 1. The dating range(s) for each poem used in this study and the more commonly assigned range of dates for each indicate the present disarray in the dating and the lack of agreement among researchers. The information given on this figure also reveals the need for a scientific analysis for dating the entire poetic corpus in the fact that the dating is so indefinite; for example, according to the literature, Beowulf could have been written any time during a 400-year span.

No one has applied the statistical tests of significance to the dynamics of typological change using multiple pairs of competing features as a technique for dating individual texts and for chronological ordering of the poetic record, although Fries discussed competing features from the standpoint of linguistic drift of individual contrastive pairs. Fries was concerned with the change-over from one feature to its competing feature through time in order to determine how long it took for word order to stabilize in English (1940) and for one feature to be replaced by another - the "time depth" required for replacement from the first occurrence of the new form to the last occurrence of the replaced form (1970).

The caveat that such a study should use prose for the data base, because prose is assumed to be closest to speech and because poetry is influenced by poetic form and poetic license (unusual order for effect), needs to be considered regarding possible effects on syntactic form. However, since the earliest extant prose in Old English begins with the time of Ælfred, analyses based on such "late" prose in comparison to the poetry would not be too beneficial in dating a poetry thought to be much earlier in time. In fact, the poetry itself needs to be investigated separately, with correlation to prose analyses of the same type. Actually, the poetry could not deviate too much from normal speech because it was an oral literature, and audience com-

prehension would demand a close proximity to speech. Although poetic conventions abound in the poetry (appositive repetitions and kennings), syntactically, the clauses are close in form to those found in prose. After the appositives are deleted and the adjectives and genitive nouns, which are separated oftentimes from their respective noun heads by as much as a line, are attached to the correct nouns, the basic typology of each clause is demonstrable.

Hypothetically, the earlier poems should contain more SOV typological features and frequency of use in contrast to SVO features and frequency of use than do the later poems, because Old English is a typologically mixed language containing constructions that follow either the inherited SOV structure or the new SVO structure from its earliest time (Lehmann, 1972a, 37-38). In fact, a smooth gradation of use through time should occur. The number of SVO features and frequency of use should increase through time with concomitant lessening of the number of SOV features and frequency of use. There should also be an increase through time in the use of mixed constructions, those constructions in which one constituent follows SOV typology and another SVO typology, e.g., constructions in which the object noun precedes the verb (SOV order), but the adjective or genitive noun modifying the object noun follow the noun (SVO order). The frequency in use of these mixed constructions should repeat the same smooth increase through time that the SVO constructions do. With correlation to known historical dates (using time series regression methodology), it should be possible to date more accurately each poem, thereby establishing the chronological order as well.

It is expected that when there are competing forms, one form will eventually win out over the other(s), the form(s) being replaced will steadily decrease in use over time, and the ratio of the usage of the archaic forms to those of the newer forms will identify a particular work's position in time relative to other works. The replacement of one feature by another should be an orderly process with the rate of change through time smooth and continuous. Furthermore, it follows that change will occur at some pace, at present unknown, suggested by Fries (1970) to be about 100 years, without reversing itself. It is further expected that the proportions between competing features will maintain themselves regardless of the line length of the poem. It is not expected that an archaic form will reoccur with the same frequency that it occurred a century or so earlier after it has been replaced by a competing form. The language will not permit the revival of an already replaced form to the extent that would have been possible during the time the archaic form was dominant. For example, Battle of Maldon appears to be a deliberate attempt to maintain the archaic poetic form. Superficially, it seems the poet was successful; yet the language is such that total conformance was impossible. The linguistic features appear to correlate with its known late date of composition, after 991 A.D., the date of the actual battle. Correlation with known historical dates should corroborate the dates established by linguistic

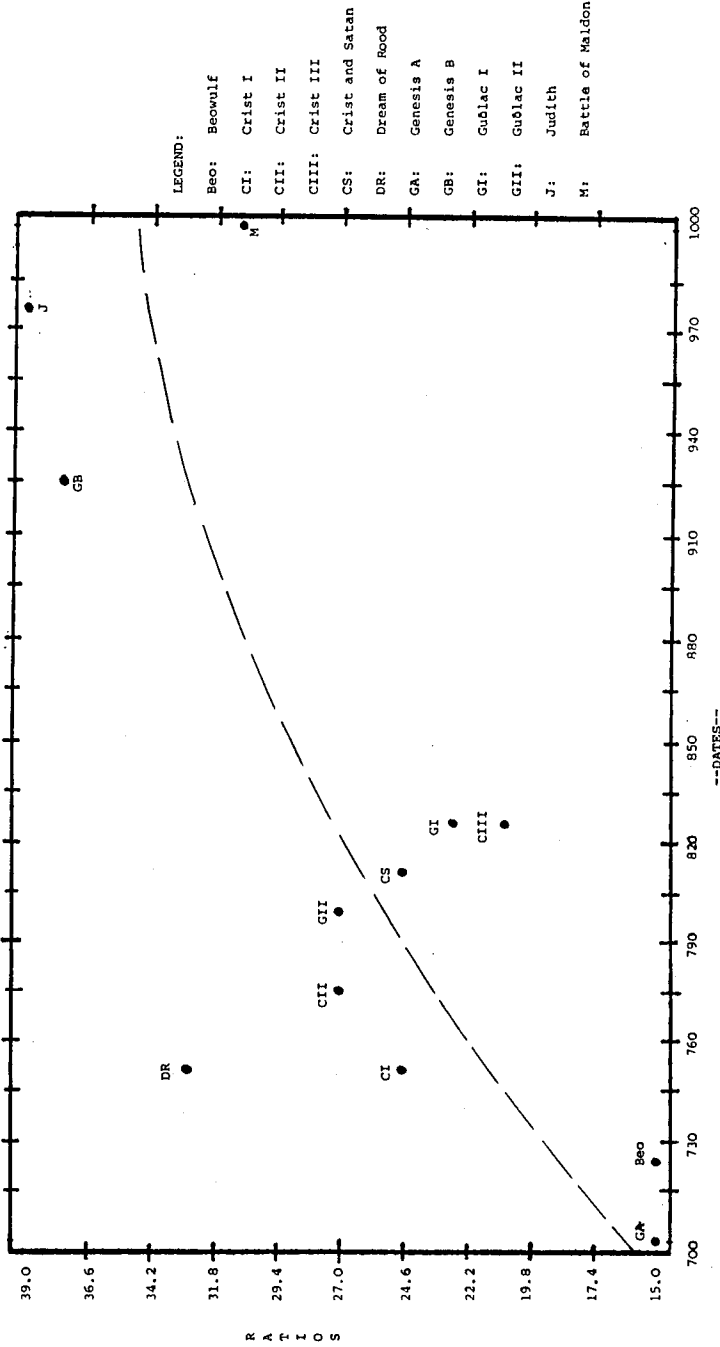


FIGURE 2: Ratio of frequency of Noun Phrase with Demonstrative to Line Count (no competing feature). Placement is according to dates suggested in the literature.

analysis.

Twelve poems were used for this preliminary study: Beowulf, Genesis A and B, Crist and Satan, Crist I, II, and III, Guðlac I and II, Judith, Battle of Maldon, and Dream of the Rood. It was felt that a representative sample of lines from each poem would adequately identify the relationship between the base form and its competing form and that the same sample size should be taken from each poem if possible. This would permit the verification of the validity of the statistic used in past studies (frequency of occurrence to line length). The sample size chosen was 349 lines, the line length of the extant portion of Judith. This sample size was not possible for Battle of Maldon and Dream of the Rood, Maldon being 325 lines in length and Rood 156. However, it was felt that line length should have little or no effect on the ratio of competing forms. It did not. Each continuous line sample was examined for the competing features noun phrase with demonstrative (se, seo, and þæt) and noun phrase without demonstrative. It was found that the presence of the demonstrative in a noun phrase was the important factor, not the presence or absence of an adjective or a genitive noun (or both) in addition to the demonstrative. The inclusion of the noun phrase in a prepositional phrase was likewise irrelevant. Therefore, only the presence or absence of the demonstrative in the noun phrase needed to be considered. This particular competing pair was chosen for the preliminary study because previous research by others had used the noun phrase with demonstrative, although in a ratio to line count and not to its competing feature. The competing feature to the noun phrase with demonstrative (SVO typology) was found to be the noun phrase without demonstrative (SOV typology), the latter being those noun phrases which would require the definite article the in Modern English.

If linguistic characteristics are examined in terms of the length of a poem, no stable pattern results (see Figure 2). The number of lines is independent of the number of occurrences of a particular linguistic form, so that a relatively modern poem may appear much older simply because of the infrequency of the form. However, if competing forms are compared, regardless of their infrequency, their ratios should reflect their correct place in time based on the replacement of multiple forms by their competing forms.

When the number of occurrences of one linguistic form to line count is plotted according to the most commonly assumed composition dates given in the literature (Figure 2), it is clearly apparent that the projected smooth progression of change through time is absent. As Figure 2 shows, the ratio is not useful because the members of the ratio do not display the expected progression. No pattern is evident except at the two extremes, and any reasonable analysis would place Beowulf and Battle of Maldon at these points in time.

The ratio of occurrences of noun phrase with demonstrative to lines and the dating of the poetry according to the hypothesis of a smooth transition from one form to another is shown on Fig-

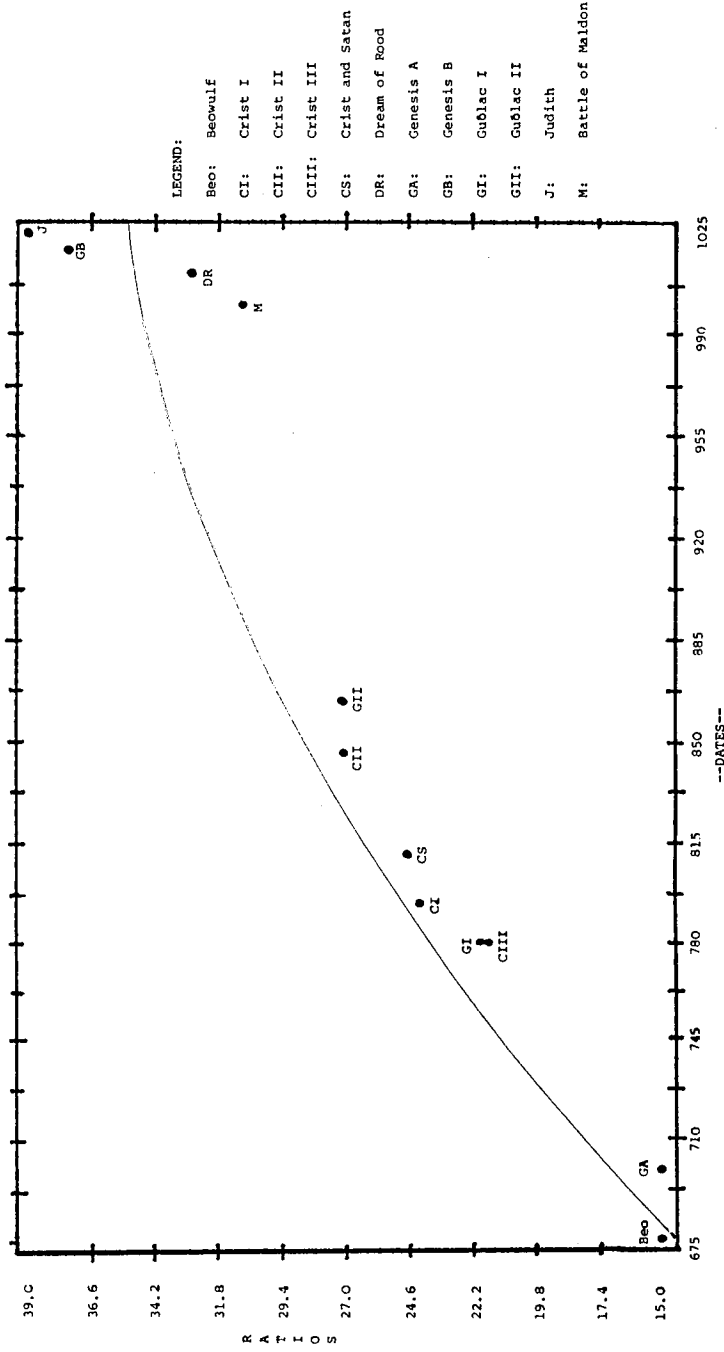


FIGURE 3: Ratio to Line Count According to Dating Forced by the Assumption of Progression (Progression Line from Figure 4)

ure 3. The expected, smooth progression is clearly evident. The ratio of lines to occurrences using the dates reported in the literature is shown on Figure 2. No such smooth progression is evident. The dash lines on Figure 2 are the curve lines from Figure 3 superimposed on Figure 2 to show the lack of fit.

As can be seen by Figure 4, the forced dating from the smooth progression hypothesis results in more reasonable dates than does the ratio of occurrences to line count as described on Figure 3. The dates and chronological order for the two ends of the continuum are reasonable. However, although the middle clustering of poems on Figure 4 appears to be placed too late, the entire sequence can be adjusted back in time while maintaining the relative chronological sequence of the group without violation of the initial hypothesis. This adjustment can also be done for this same middle group on Figure 3. The relative positioning of the middle cluster seems more reasonable on Figure 4 than the one shown on Figure 3. The sequence and the times shown on Figure 4 will be shown to be valid or adjusted subsequently, using the ratios of multiple pairs of competing forms. The information presented on Figure 5 confirms the conclusion detailed on Figure 1 (discussed above on p. 5) in that the observed pattern is inconsistent with the hypothesis that the progress of the adoption of a new form is smooth and continuous. The dash lines on Figure 5 indicate the relationship defined by the statistical technique (reported on Figure 4) superimposed on the dates given in the literature. They clearly show the lack of smooth progression.

The preliminary study, having shown that the technique and methodology are valid insofar as this one form is concerned, it now remains that multiple competing pairs be treated exactly the same. It is not possible to establish text dates on the basis of one ratio. Additional ratios should corroborate each other and contribute to a final dating scheme. If the anticipated smooth transition is not apparent according to the attributed dates, these works should then be redated such that the transition from the older form to the newer form appears to take place smoothly; more accurate dates should result. The preliminary results indicate that the currently accepted dates and sequencing may be in error. It is postulated that each competing pair should give a result similar to the one found in this analysis, that is, a similarly shaped curve is expected for each pair.

Once the underlying relationships that exist between the true date of a work and the rate of form replacement have been identified, and given a known relationship between competing forms, any work can be dated; once the dating methodology has been verified by the examination of multiple paired, competing features, the relationship between the features and the dates can be examined statistically for "goodness of fit". The resulting quantitative relationships can be used for dating unexamined texts and to determine confidence intervals about the dates calculated, that is, probabilistic statements can be made about the dates within some range of the calculated date.

The results of a complete examination of the Old English

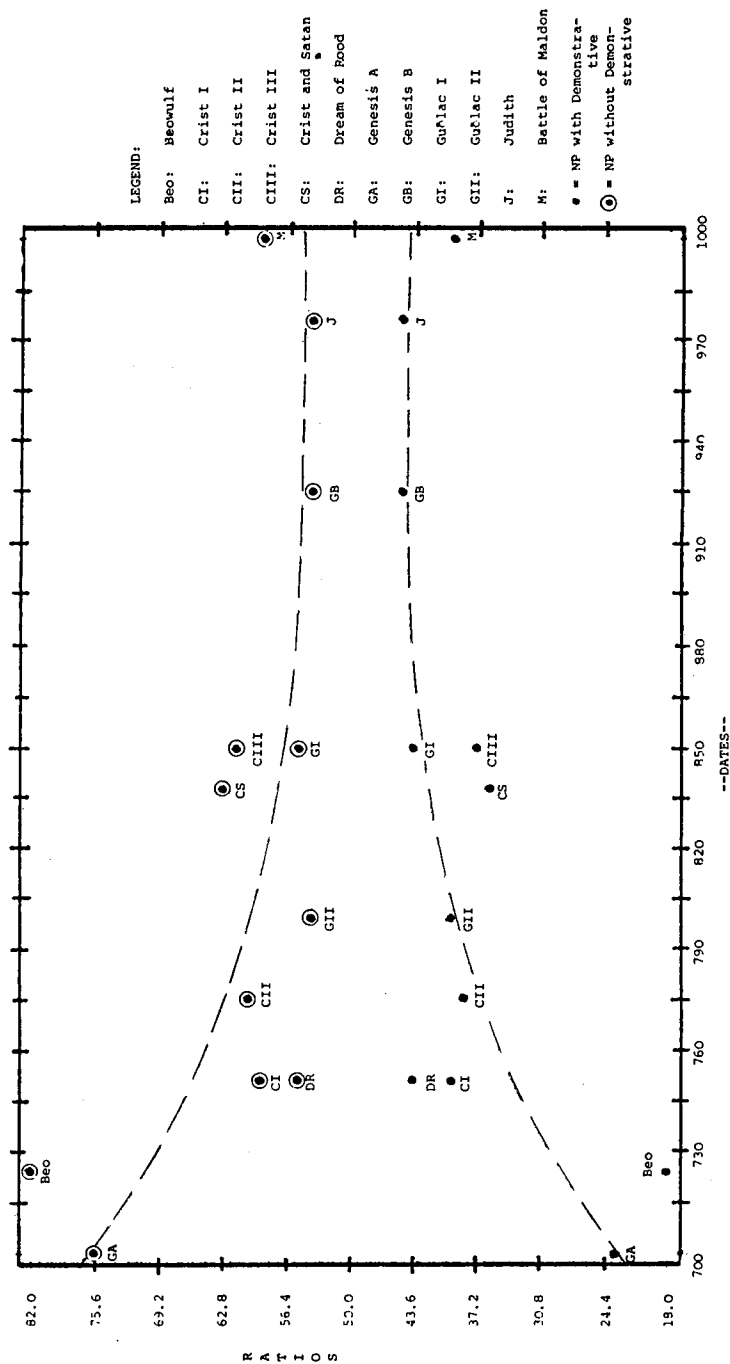


FIGURE 5: Ratios of Competing Features Placed According to Text Dates Usually Assigned in the Literature

poetic texts according to this methodology should affect current thought in that grammars of Old English can reflect the true nature of the language - it is a dynamic structure, constantly changing, and the Old English period is not a single, static period in which one form dominates and variants pervade. The variants may well be way stations through time that reaffirm the dynamic nature of language. An accurate dating can lead to the development of several grammars, each assigned to a specific time, rather than the current situation in which the entire period of Old English is compressed into one static period. This compression and stasis give the appearance that all variations occur simultaneously with the dominant form in a single time period with the variants representing, at best, dialectical differences. If the date of a text is known, the variant forms found in that text become dated.

This same methodology and statistical technique could be used to investigate change and rates of change in Middle English and Modern English, possibly reaffirming Fries' findings that it takes about 100 years for total replacement to occur (1970; 924, 926). It could be used also for languages other than English and other than Indo-European, given a relatively long period of written records, in order to test the universality of these hypotheses and Fries' "time depth".

In order to determine the dating of each poem in the poetic record and to establish the chronological sequence, a complete investigation requires the determination of ratios for multiple competing pairs. As Old English is a language containing competing forms conforming to either the archaic SOV typology or the new SVO typology, as well as constructions in which both typological patterns occur together (such as placement of adverbials both before and after the verb in the same clause), the ratios for mixed constructions as well as the competing pairs given below need to be determined in addition to the one in this study. Further examination may show that other contrastive pairs need to be included also.

- (1) Adverbial prepositional phrases in which the preposition indicates the relation vs. adverbial noun phrases in which inflection indicates the same relation;
- (2) The positions of a genitive noun, adjective, demonstrative, possessive pronoun and indefinite pronoun, each in relation to the head noun and in relation to others in constructions containing more than one of the above-given modifiers;
- (3) The positions of a preposition in relation to its object noun;
- (4) The positions of the object noun in relation to the verb;
- (5) The positions of the Indirect Object and Direct Object in relation to each other and to the verb;
- (6) The presence of to as an Indirect Object marker + inflection vs. the use of the dative inflection only;
- (7) The presence or absence of the possessive pronoun in noun phrases which require one in Modern English;

(8) The ratios of SOV clauses to SVO and SOVO clauses, not only of clauses containing an object but also clauses in which adverbial placement follows one typology or the other (SOVO is a typologically mixed construction);

(9) The presence or absence of case alternation associated with specific verbs and prepositions;

(10) Clauses without subjects (not deleted subjects) vs. clauses with subjects;

(11) The use of personal pronouns with either an antecedent noun or a postcedent noun or with neither; and

(12) The use of a pronoun subject vs. a deleted subject and vs. a true subjectless clause.

SELECTED BIBLIOGRAPHY

- Chambers, Robert W. 1965 edition. Widsið. Cambridge: Cambridge University Press.
- Dickens, Bruce, and A. S. C. Ross. 1934. The Dream of the Rood. London: Methuen and Co.
- Dobbie, Elliott Van Kirk. 1942. "Introduction". The Anglo-Saxon Minor Poems. Vol. VI of The Anglo-Saxon Poetic Records. New York: Columbia University Press.
- Fries, Charles C. 1970. "The Time 'Depth' of Coexisting Conflicting Grammatical Signals in English". Actes Dux^e International Des Linguistes. Bucarest: Editions de L'Academie de la Republique Socialiste de Roumanie. 923-926.
- _____. 1940. "On the Development of the Structural Use of Word Order in Modern English". Language 16, 3; 199-208.
- Hyman, Larry M. 1975. "On the Change from SOV to SVO. Evidence from Niger-Congo". Word Order and Word Order Change. Charles N. Li, editor. Austin: University of Texas Press. 113-148.
- Klaeber, Fr. 1950 edition. Beowulf and The Fight at Finnsburg. Lexington, Mass.: D. C. Heath and Co.
- Krapp, George Philip. 1932. "Introduction". The Vercelli Book. Vol. II of The Anglo-Saxon Poetic Records. New York: Columbia University Press.
- Lehmann, Winfred P. 1978a. "The Great Underlying Ground-Plans". Syntactic Typology. W. P. Lehmann, editor. Austin: University of Texas Press. 3-56.
- _____. 1978b. "English: A Characteristic SVO Language". Syntactic Typology. W. P. Lehmann, editor. Austin: University of Texas Press. 169-222.
- Vennemann, Theo. 1975. "An Explanation of Drift". Word Order and Word Order Change. Charles N. Li, editor. Austin: University of Texas Press. 269-306.

"WHAT'S ELSE TO SAY?"*

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This paper examines the historical development of the word else, concentrating on the contrast between current use and its Early Modern English use in Shakespeare.

In current English on all stylistic levels, both spoken and written, else rarely calls attention to itself. It is an everyday word, perhaps used more frequently in speech than in writing. Else ranks 180th (out of 17,871 types) in Dahl's (1979) study of spoken English. It ranks 548th (out of 50,406 types) in the Brown corpus of written English (Kučera and Francis, 1967). Speakers apparently acquire idiomatic control of else easily, for school grammars do not mention it, and beginning writers almost never use else awkwardly.¹

Else receives scant attention in grammars, perhaps because speakers are so comfortable with it, but also because else does not fit readily into the usual word classes. Among the extensive traditional grammars, Poutsma's treatment (1904) is the best for pointing out with literary citations uses of else now obsolete or rare even in dialects. Curme (1931-35) mentions else briefly under his categories appositive adverb and disjunctive adverb and in scattered references elsewhere. Jespersen's seven volume grammar on historical principles uses else in several citations illustrating various points of grammar but does not discuss the grammar of else itself. Jespersen and other grammars in the philological tradition discuss else most fully in attempting to explain the voiceless final consonant in else and other words which derive from old adverbial genitives. Contemporary grammars pay more attention to syntactic characteristics. Quirk et al (1972) treat else in several sections--as a post modifier and as an inferential and concessive conjunct. Ralph Long's treatment of else in The Sentence and Its Parts is the longest I've found in recent synchronic grammars. He classifies else as an adjunct to or, a modifier, and as a conjunctive adverb. He also discusses how it differs from other conjunctive adverbs and compares else with either and other.

Dictionaries tend to give more information. Written over a century ago, the two and a half column entry for else and its compounds in the Oxford English Dictionary remains the best generalized treatment of the current grammar of else. The entries for else in the Second (1934) and Third (1961) editions of Webster's

*Antony and Cleopatra II vii 58

International Dictionary suggest how over the years else has become more restricted in grammar and meaning. Since the Second incorporates uses both obsolete and current in 1934, the entry has more subdivisions by grammar and by sense than does the 1961 edition which for lack of space eliminated most obsolete material. The Second gives nine compounds beginning with else, and the Third six. The Second has a long usage note on the correctness of whose else and nobody's else, but gives only a cross reference to or else. The Third has a different usage note on the genitive of else and a much fuller treatment of or else and absolute else.

The only usage problem² occasioned by else concerns the genitive inflection of an else which modifies a preceding indefinite or interrogative, e.g., everyone else's, who else's vs. everyone's else, whose else. Fowler's Dictionary of Modern English Usage (1926) concedes everyone else's but holds on to whose else; interestingly, the second edition of 1965 repeats the same entry, word for word. Despite Fowler, inflected else is now completely established. The Encyclopedic Dictionary of English Usage (1974) states simply that everyone else's is preferred to everyone's else; and The Harper Dictionary of Contemporary Usage (1975) does not mention else at all. In summary, standard reference sources offer only a fragmentary and incomplete description of the current grammar of else.

Briefly, this is the status of else in current usage.

Form: It has only one variant form, else's, which occurs when else is the final constituent in a group genitive, e.g., nobody else's fingerprints or who-in-the-heck-else's fingerprints. Else does not readily participate in the word building processes of the language. For all practical purposes, it occurs in one compound only, elsewhere. Although Webster's Third has entries for elseways, elsewhence, elsewhither, and elsewise, no citations are given, and I have found no instances of these compounds in my reading. Webster's Second lists elsewhen and elsewhat as already obsolete. The English Dialect Dictionary, based mainly on forms recorded in the British Isles in the late nineteenth century, also lists elsehow. Neither does else regularly participate in the derivation of new words by affixation. When novelist William Styron coined the form elseness ("...the elseness in beauty...") in Set This House on Fire, he signalled his departure from the norm by italics.

Syntax: Else is highly restricted in position and context. In only one structure does it occur independently, absolute else used as a conjunction, as in sentences (1) and (2).

- (1) More complex sentences and a larger vocabulary are signs of development, but they do not guarantee effectiveness; else there would be much more satisfaction with the writing of older children. (Herbert J. Muller)
- (2) For thou desirest not sacrifice, else would I give it. (Psalm 51:16)

Absolute else can be paraphrased as or else and occurs only in positions in which or else can substitute. If it is construed as a reduction of or else, then the general rule is that else is

always in constituency with a preceding word or phrase in the sentence.

Else is further restricted in context. It follows only or, interrogatives, and indefinites.

Its occurrence with coordinator (either...) or is straightforward.

- (3) ...we can infer that most of the furnishings in Gough Square had either belonged to the owner of the house or else, more probably, were sold by Johnson when he left. (W. Jackson Bate)

- (4) "I knew from the start this was temporary, or else I couldn't have stood it." (Ivy Goodman)

Sentences (5)-(11) illustrate the occurrence of else with interrogatives who, whom, what, where, how, when, and why. I have found no unambiguous examples of which else.

- (5) Who else is going to be in the backcourt? (Steve Hershey)

- (6) "Whom else should I tell?" (John Galsworthy)

- (7) "...I'll see what else they have that's like that." (L. Rust Hills)

- (8) Where else but Washington would such a thing begin? (Virginian-Pilot)

- (9) How else could I approach understanding Bertha? (John Cheever)

- (10) "When else could he have died?" Garp has written. (John Irving)

- (11) She knew he had come to seek her out, why else would he come? (Mary Lee Settle)

Else occurs after a wide range of indefinites. As shown in sentences (12)-(31), else can follow any member of the paradigm of indefinites given below.

	-WHERE	-PLACE	-THING	-ONE	-BODY
ANY-	(12)	(16)	(20)	(24)	(28)
EVERY-	(13)	(17)	(21)	(25)	(29)
NO-	(14)	(18)	(22)	(26)	(30)
SOME-	(15)	(19)	(23)	(27)	(31)

- (12) If she caught sight of me out there, it would be the end to my boating in the marsh or anywhere else,... (Louis Rubin)

- (13) Like everywhere else in the United States, Chattanooga is preparing for the great celebrations of 1976... (Jan Morris)

- (14) Nowhere else in the home is good lighting more important than in the kitchen. (Southern Living)

- (15) "But you'll have to find somewhere else to go..." (Mark Helprin)

- (16) "...I'd rather walk on a golf course than anyplace else." (Herbert Warren Wind)

- (17) It had soldiers and forts, like everyplace else. (Jerome Charyn)

- (18) I was surprised to find that I had almost no place else to go. (John Cheever)

- (19) I promised myself I would start the new year someplace else. (Mary Lee Settle)
- (20) "...they refuse to listen to anything else we have to say..." (Margaret Lantis)
- (21) Everything else was taken away from him. (W. S. Merwin)
- (22) If the successful attack on Velikovsky's publishers did nothing else, it pointed out to the unwary just what kind of modern punishments are available for modern heresies. (William Irwin Thompson)
- (23) I tried to think about something else, but my thoughts kept returning to the boat. (Louis Rubin)
- (24) "Does anyone else live here?" (Wesley Patterson)
- (25) He will tell everyone else that he cannot accept money to say he likes something he has never used. (Wells Twombly)
- (26) Scanlon gave a low whistle, but no one else said anything. (Ken Kesey)
- (27) Certainly I understand why a writer wants someone else to read his work and to comment on it. (John Ciardi)
- (28) He made more money by far than anybody else. (Leo Durocher)
- (29) "Everybody would just be walking around stealing everybody else's stuff." (Amitai Etzioni)
- (30) "If nobody else is using your wide net could we use it?" asked William Wallace. (Eudora Welty)
- (31) And Doc Brooks reminded him of somebody else. (Francis Irby Gwaltney)

Notably lacking from this paradigm are time words ending in -time or -when, the latter not even occurring with the quantifiers (sometime vs. *somewhen).

The now obsolete indefinites naught and ought plus else are still used by writers of fiction to enhance the historic setting of their novels. For example, a mystery written in 1949 and set in Tudor England contains this sentence.

- (32) "Work shall be started for my Queen's apartment before ought else." (Jean Plaidly, Murder Most Royal)

Else also follows almost the entire range of indefinite relatives: (33) whoever, (34) whomever, (35) whatever, (36) wherever, (37) however.

- (33) Whoever else goes hungry, he won't. (World Book Encyclopedia Dictionary)
- (34) Rather than idolizing an uncle, they idolize Bob Dylan or Donovan or whomever else the peer group holds up for a life style model. (Alvin Toffler)
- (35) No poem is a "trip," whatever else it may be. (James Agee)
- (36) Twenty-five hundred of our troops from this military district left the city last night--destination probably North Carolina or wherever else the storm cloud may hang most darkly. (Letter written 12/15/1862, in Children of Pride)
- (37) ...however else one may faintly designate the "human"

soul... (James Agee)

The citation for wherever (36) is from more than a century ago, yet it does not sound odd. I do not have citations for whenever else and whichever else. I doubt that whichever else occurs, but a sentence like (38) using whenever else seems natural to me.

- (38) Come at lunch time, or whenever else you can get away for a few minutes.

All (39) and the mass quantifiers little (40) and much (41) can precede else.

- (39) We heard it [=car engine] sputter and cough through the sleeping neighborhood like a series of small explosions. All else was quiet. (Winston M. Estes)
 (40) Since there was little else to do, we all went out onto the sundeck. (William Irwin Thompson)
 (41) But a glance at the Contents shows that there is much else in the book. (letter from Hornbeam Press)

Phrases that refer to an indefinite quantity, though they do not contain one of the indefinite words, can precede else: a lot else, a whole lot else, not a whole lot else, a great deal else.

Several indefinites which precede else can themselves be modified: hardly anywhere else, not everyone else, almost everyone else, all I've got else, so much else, not much else, nothing much else, too much else, much of anything else.³ Expletives and euphemisms for expletives can be inserted, particularly after what and who: what the hell else, what in hell else, who the heck else, what in the world else, some goddamn place else.

A noun phrase ending in else can be post-modified by an adjective: no one else alive,⁴ everything else necessary, all else together. In such constructions else is simply the first of the post-modifiers of an indefinite; grammatical acceptability of the phrase is not altered by the deletion either of else or of the other adjective.

Let us now look at else of four centuries ago, mainly as it occurs in Shakespeare.

Grammars that deal with Early Modern English have little to say about else. E. A. Abbott's A Shakespearean Grammar (3rd ed, 1870) uses else only in examples to illustrate other grammatical points. Dictionaries of Shakespeare's language usually offer no grammatical information about else and vary widely in their treatment of meaning. An early nineteenth century collection (Nares, 1822) says only that else is "rather licentiously used for others." Onions' A Shakespeare Glossary gives three senses and five references. The best dictionary by far is the two volume Shakespeare-Lexicon by Alexander Schmidt, the most recent revision of which appeared around the turn of the century. The entry for else--including the separately treated or else--gives over 100 line references, thus classifying by sense almost one-fourth of the occurrences of else in Shakespeare. The most useful reference tool for my purposes, however, is The Harvard Concordance to Shakespeare (1973), edited by Marvin Spevak, which is based on

The Riverside Shakespeare (1974), edited by G. Blakemore Evans.⁶ Else occurs 448 times in the works of Shakespeare, 369 times in verse and 79 in prose.⁷

About half of the occurrences in Shakespeare seem entirely contemporary and unremarkable. Else occurs in the coordinator or else 141 times.

(42) ERR IV iii 77 I pray you sir, my ring, or else the chain.

(43) PER IV vi 89P But I protest to thee, pretty one, my authority shall not see thee, or else look friendly upon thee.

Absolute else as a paraphrase of or else occurs 55 times.

(44) ROM III i 195 Let Romeo hence in haste, / Else, when he is found, that hour is his last.

(45) AWW II iii 263P You are not worth another word, else I'd call you knave.

Who and what, but not the remaining interrogatives, occur directly before else.

(46) JN V ii 100 Who else but I, / And such as to my claim are liable, / Sweat in this business and maintain this war?

(47) 1H6 II iv 55 Well, well, come on, who else?

(48) ADO IV ii 52P What else, fellow?

As in current English, else in Shakespeare frequently modifies an indefinite. However, the set of indefinites has changed since Early Modern English. Who, what, and where are indefinites as well as interrogatives for Shakespeare. (Recall Iago's Who steals my purse steals trash.) Indefinites in -body and -place are infrequent, and everybody never occurs. Indefinites in -ever occur fewer than one hundred times in the entire corpus. However else does occur, but only once.

(49) LR II i 117 I shall serve you, sir, / Truly, however else.

The only other indefinite in -ever before else diverges from current English and, indeed, is the sole occurrence of the form whatsomever in Shakespeare.

(50) HAM I ii 248 And whatsomever else shall hap to-night.

The chart below shows the members of the indefinite paradigm used for current English which also occur before else in Shakespeare. The first number in the slot indicates frequency.

	-WHERE	-PLACE	-THING	-ONE	-BODY
ANY-	-	-	-	1 (55)	-
EVERY-	-	-	-	-	-
NO-	1 (51)	-	32 (53)	1 (56)	-
SOME-	2 (52)	-	5 (54)	-	-

(51) WIV IV ii 159P Ford: Well, he's not here I seek for. Page: No, nor nowhere else but in your brain.

(52) TN IV i 10 I prithee vent thy folly somewhere else.

(53a) MV IV i 432 I will have nothing else but only this,

(53b) MV III i 54P ...if it will feed nothing else, it will feed my revenge.

(54) TRO V ii 86 I'll give you something else.

(55) TN II v 27P Besides she uses me with a more exalted

- respect than any one else that follows her.
 (56) TIT IV ii 142 And no one else but the delivered
 empress.

Aught else and nought else occur a total of five times, only in verse.

- (57) H5 IV i 246 Art thy aught else but place, degree, and
 form,
 (58) TNK I v 9 We convent nought else but woes:
All else occurs four times.
 (59) ROM III v 242 If all else fail, myself have power to
 die.

Let us now examine the situations in which the current use of else and Shakespeare's else do not coincide. In Shakespeare's time, else had more freedom.

In the coordinator or else, else need not immediately follow or.

- (60) PER II iii 71 Do as I bid you, or you'll move me else.
 (61) 1H4 II iv 179P You rogue, they were bound, every man
 of them; or I am a Jew else, an Ebrew Jew.

With interrogatives else could be extraposed, or at least in two instances, fronted. Who else and what else occur both with and without extraposition (see (46)-(48)), but in the single instance with where, else is extraposed.

- (62) R2 IV i 57 Who sets me else?
 (63) 2H6 III ii 389 What were it else but like a pleasant
 slumber?
 (64) ADO IV ii 46P What heard you him say else?
 (65) TMP III ii 10P Stephano: Thy eyes are almost set in
 thy head. Trinculo: Where should they be set else?

The three instances of else with how give an indication of the positional freedom of else--extraposed (66), extraposed to sentence final position (67), and fronted (68). Interestingly, all three are in prose portions of the plays.

- (66) MND V i 248P How is it else the man i' th' moon?
 (67) TIM I ii 90P How had you been my friends else?
 (68) AYL III ii 85P I cannot see else how thou shouldst
 scape.

Why else does not occur in Shakespeare, but wherefore else does--twice--with else once after and once before the interrogative.

- (69) 3H6 IV iii 21 Ay, wherefore else guard we his royal
 tent
 (70) R3 III vii 116 Else wherefore breathe I in a Christian
 land?

When else never occurs in Shakespeare.

Else exhibits similar freedom with indefinites. I use the term rather loosely to include Shakespeare's indefinite use of who and what and quantity words all, any, many, never, and none. Shakespeare does not use much or little with else.

Else can immediately follow who and what; this word order is entirely contemporary, but the use of who and what as indefinites is not, current English preferring whoever and whatever.

(71) HAM V ii 119P ...his semblable is his mirror, and who else would trace him, his umbrage, nothing more.

(72) MAC V vi 5 Worthy Macduff and we/ Shall take upon 's what else remains to do.

With what, else also occurs extraposed.

(73) WT II iii 138 or I'll seize thy life/ With what thou else call'st thine.

The flexibility of the word order when the indefinite has modifiers in addition to else is shown by the following pair.

(74) OTH I iii 286 With what else needful your good Grace shall think/ To be sent after me.

(75) MAC V ix 37 this, and what needful else/ That calls upon us

In current usage only the order of (74) is natural (e.g., nothing else important vs. *nothing important else).

Of the remaining indefinites, only all occurs with extraposed else.

(76) PER I ii 48 All leave us else.

Any, many, and never occur once each, with else immediately following.

(77) AYL I ii 141P But is there any else longs to see this broken music in his sides?

(78) COR I ix 49 Which without note, here's many else have done--

(79) WIV V v 36P ...he would never else cross me thus.

None occurs with else eleven times, once (82) extraposed.

(80) TGV II i 37P ...for without you were so simple, none else would...

(81) HAM I iii 44 Youth to itself rebels, though none else near.

(82) H8 II ii 134 I will have none so near else.

Although modern readers may find Shakespeare's set of indefinites that occur with else peculiar, they should not be uncomfortable with else occurring with indefinites, for that is its precise use in current English.

However, Shakespeare also uses else in other kinds of noun phrases, as (83)-(94) show.⁸

(83) what wrong else
what news else
what shame else
what trespass else
what ceremony else

(85) any suitor else
any woman else

(86) every eyeball else

(87) no man else (5)
no venom else
no kin else
no Roman else
no tongues else
no end in't else

(88) some man else (2)
some men else

(84) all corners else
all places else
all affections else
all motions else
all eyes else
all professors else
all the rites of knighthood
else
all affairs else
all things else (3)
all men else
all creatures else
all cruels else
all crosses else
all our company else
all matter else

- | | |
|--|--------------------------|
| (89) such things else | (84) -continued- |
| (90) many a creature else | all damage else |
| (91) one place else | all feeling else |
| (92) his virtues else | all proofs sleeping else |
| (93) three else of Cyprus | |
| (94) no other quarrel else | |
| (95) thy parts sovereign and
pious else | |
| (96) else no creature seeing | |

Groups (83)-(88) ring familiar to us, for the noun head is preceded by an interrogative, all, or one of the words that form our current indefinites. (89) and (90) are likewise indefinite in reference. However, in context, (91) seems definite, even though in other places one is equivalent to the indefinite article a.

- (91) R3 I ii 110 Yes, one place else, if you will hear me name it.

Neither in form nor in reference does (92), from Hamlet's "tragic flaw" speech, seem indefinite.

- (92) HAM I iv 33 His virtues else, be they pure as grace...
In (93) the number three is the head of the noun phrase.

- (93) OTH II iii 55 Three else of Cyprus.../ Have I tonight fluster'd with flowing cups

Dictionaries and textbooks often translate these noun phrases by replacing else with other and putting it before the noun, e.g., every eyeball else → every other eyeball. Such use of other is also frequent in Shakespeare. (94) is the one noun phrase in which other and else both modify the noun.

- (94) COR IV v 127 Worthy Martius,/ Had we no other quarrel
else to Rome but that/ Thou art thence banish'd

The final two noun phrases I find ambiguous.

- (95) H8 II iv 141 (If thy rare qualities.../ and thy parts/
Sovereign and pious else, could speak thee out)

- (96) HAM III ii 256 Thoughts black, hands apt, drugs fit,
and time agreeing,/ [Confederate] season, else no
creature seeing

In (95) else could modify parts, along with the compound adjective phrase sovereign and pious; in (96) else could modify creature. However, in Shakespeare, else is also a very movable conjunctive adverb, roughly equivalent to current otherwise. Either interpretation seems possible for (95) and (96).

The use of else this second way, absolutely (not in constituency with or or in a noun phrase), as a conjunctive adverb, is the most problematic of all. I present here only a sampling of the data and the questions it raises.

The favorite positions of absolute else are after a relative word (97)-(98), between parts of the verb (99)-(100), and at the end of a sentence (101)-(109).

- (97) TGV III i 9 duty pricks me on to utter that/ which,
else, no worldly good should draw from me.

- (98) CYM I iv 22P ...be it but to fortify her judgment,
which else an easy battery might lay flat

- (99) MAC III i 20 We should have else desir'd your good advice.
 (100) MM IV iii 173P ...they would else have married me to the rotten medlar.
 (101) H8 I iii 65 Come, good Sir Thomas,/ we shall be late else.
 (102) OTH IV i 163P Faith, I must, she'll rail in the streets else.
 (103) OTH V ii 136 Ask thy husband else.
 (104) ADO III iv 38P Ask my Lady Beatrice else, here she comes.
 (105) JN II i 276 Bastards, and else.
 (106) AWW III v 74 The gods forbid else!
 (107) OTH IV ii 133 I will be hang'd else.
 (108) OTH IV i 125P I am a very villain else.
 (109) 1H4 III iii 111P There's neither faith, truth, nor womanhood in me else.

The third group can suggest the semantic range of else in Shakespeare. In (101) and (102), else seems to mean 'or else', 'otherwise', 'under other circumstances'. In (103) and (104), else seems to mean 'in addition', 'also'. (105) Bastards, and else is the most popular citation in dictionary entries for else. The Shakespeare-Lexicon glosses it as 'such like', The Riverside Shakespeare merely 'others'. (106) The gods forbid else! is a variation on an oath that had been in English for centuries.⁹ In a similar exclamation in Antony and Cleopatra, Shakespeare supplies the name of an appropriate diety and changes the word order but still retains else.

- (110) ANT III iii 43 Isis else defend!
 (107)-(109) are used by the characters to swear to the truth of their testimony.

At the beginning of a sentence coordinator else (reduced from or else) and conjunctive adverb else are almost impossible to distinguish. (111) Additional study may prove the distinction to be unwarranted.

- (111) AWW I iii 233 My lord your son made me to think of this;/ Else Paris, and the medicine, and the king,/ Had from the conversations of my thoughts/ Happily been absent then.

Much else remains to be said about else. I plan to enlarge this study to include data from all periods of English. But what's else to say must await some time else.

NOTES

¹ Else earns a place in grammar books largely because of problems in forming the genitive which only accidentally implicate else.

² George P. Krapp in A Comprehensive Guide to Good English (1927) does register a usage problem that I have not found elsewhere. Krapp maintains that the correlative of else is

than, not but, thus objecting to A butterfly is nothing else but a caterpillar fully developed.

3 In something quite else, quite seems to be qualifying else. Consider these two sentences.

- a. But what, in Ryle's view, actually does make the clowning clever is something quite else... (Jerry Fodor)
- b. I think Marilyn Monroe was a tragedy of civilization, but that is something quite else again from, and even more poignant than, being a specially American tragedy.
(Diana Trilling)

4 Would the genitive be no one else alive's? (No one else alive's account of the explosion mentions the helicopter.)

5 In a phrase like nothing much else, else is the second of the post-modifiers. This suggests an analysis of much else (41) as a dummy indefinite plus two post-modifiers.

6 All textual references to Shakespeare in this paper are to The Riverside Shakespeare. Abbreviations of titles conform to those used in the concordance and are listed in an appendix. An upper case Roman numeral indicates Act; lower case Roman, scene; Arabic, line. P=prose.

7 I exclude in this paper about ten items in the corpus which present what seem to be insoluble textual or semantic difficulties.

- | | | | |
|--------|--------------------|------|--------------------|
| 8 (83) | LUC 1622 | (84) | TMP I ii 492 |
| | TGV I i 58 | | SHR I i 244 |
| | WT IV iv 840P | | TN I i 35 |
| | 2H6 III i 132 | | TN II iv 18 |
| | HAM V i 223, 225 | | WT V i 68 |
| (85) | R3 I iii 64 | | WT V i 108 |
| | TRO I i 33P | | R2 I i 75 |
| (86) | TMP I ii 303 | | 2H4 V v 26P |
| (87) | AYL V iv 59P, etc. | | MAC III i 81, etc. |
| | R2 II i 157 | | MAC V viii 4 |
| | TIM I i 121 | | HAM IV iii 22P |
| | JC III i 91 | | LR III vii 65 |
| | HAM V ii 184P | | TNK III vi 127 |
| | TNK V iii 75 | | TMP II ii 174P |
| (88) | AYL I ii 224, etc. | | ADO III i 54 |
| | R3 III ii 66 | | TRO II ii 3 |
| (89) | OTH I iii 282 | | LR III iv 13 |
| (90) | 1H4 V v 7 | | WT III ii 112 |

9 In the B text of Piers Plowman, for example, we find And so I leue leelly, lor[d] forb[e]de ellis: 'And so I believe loyally, may the lord forbid otherwise'.

REFERENCES

- Abbott, E. A. A Shakespearian Grammar. 3rd ed 1870.
 Curme, George O. A Grammar of the English Language. 1931-35.
 Dahl, Hartvig. Word Frequencies of Spoken American English. 1979.
 Evans, G. Blakemore, ed. The Riverside Shakespeare. 1974.

- Fowler, H. W. A Dictionary of Modern English Usage. 1926; 2nd ed rev 1965.
- Jespersen, Otto. A Modern English Grammar on Historical Principles. Seven parts, 1909-1949.
- Kucera, Henry and W. Nelson Francis. Computational Analysis of Present Day American English. 1967.
- Long, Ralph. The Sentence and Its Parts. 1961.
- Mager, N. H. and S. K. Encyclopedic Dictionary of English Usage. 1974.
- Morris, William and Mary. Harper Dictionary of Contemporary Usage. 1975.
- Nares, Robert. A Glossary; or, Collection of Words, Phrases... in The Works of English Authors, Particularly Shakespeare, and His Contemporaries. 1822.
- Onions, Charles. A Shakespeare Glossary. 1911; 2nd ed rev 1966.
- Poutsma, H. A Grammar of Late Modern English. 1904.
- Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, Jan Svartek. A Grammar of Contemporary English. 1972.
- Schmidt, Alexander. Shakespeare-Lexicon. 1874-75; 3rd ed rev 1901.
- Spevak, Marvin. The Harvard Concordance to Shakespeare. 1973.

APPENDIX

ADO	Much Ado About Nothing
ANT	Antony and Cleopatra
AWW	All's Well That Ends Well
AYL	As You Like It
COR	Coriolanus
CYM	Cymbeline
ERR	The Comedy of Errors
HAM	Hamlet
1H4	The First Part of King Henry The Fourth
2H4	The Second Part of King Henry The Fourth
H5	King Henry The Fifth
1H6	The First Part of King Henry The Sixth
2H6	The Second Part of King Henry The Sixth
3H6	The Third Part of King Henry The Sixth
H8	King Henry The Eighth
JC	Julius Caesar
JN	King John
LR	King Lear
LUC	The Rape of Lucrece
MAC	Macbeth
MM	Measure for Measure
MND	A Midsummer Night's Dream
MV	The Merchant of Venice
OTH	Othello
PER	Pericles
R2	King Richard The Second
R3	King Richard The Third

ROM	Romeo and Juliet
SHR	The Taming of the Shrew
TGV	The Two Gentlemen of Verona
TIM	Timon of Athens
TIT	Titus Andronicus
TMP	The Tempest
TN	Twelfth Night
TNK	The Two Noble Kinsmen
TRO	Troilus and Cressida
WIV	The Merry Wives of Windsor
WT	The Winter's Tale

COHESION IN LATIN AND IN OLD ITALIAN

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Historical linguistics studies the causes, conditions and consequences of the continuous process of language change. Significant results have already been obtained in the fields of historical phonology, morphology and syntax. Recent advances in general linguistic theory, especially in textlinguistics, suggest another possible dimension for a diachronic analysis of a language: that of a text.¹ The question "What changes when language changes?" can be made more specific, namely: "Are there any important differences in the construction of texts in various stages of a language, let's say, in Latin and in Old Italian?"

The answer to this question involves some basic methodological problems, some of which will be addressed here. A customary practice in historical linguistics is a comparison of two phases of the same language. This comparison is valid only between units of the same linguistic level, for example phoneme to phoneme, morpheme to morpheme, etc. In much the same way that a phoneme is a linguistic unit, so is a 'text'. Although theories and definitions of 'text' abound, they only take into consideration the semantic content or pragmatic functions of individual texts.² However, typologies of texts based on pragmatics or semantics lack the necessary specificity in a diachronic analysis.

One possible method of comparison of texts is translation. In fact, Hoenigswald notes that "We may picture the analysis of linguistic change as being performed upon a 'translation' - a translation, ideally, of the texts of the earlier stage into texts of the later stage..."³ One such translation is the *volgarizzamento* (a translation from Latin to an Old Italian vernacular) of the Latin Pamphilus de Amore. The early XIII cent. ms (Saibante-Hamilton 390, now in the Staatsbibliothek in Berlin) contains a linear translation of the Latin text into Old Venetian.⁴ The plot of the story is well known: a young man, Pamphilus, falls in love with Galatea, who scorns him. With the help of a procuress, and after a number of meetings with Galatea, Pamphilus is able to possess her.

Assuredly, the use of a particular translation to study the means of textual cohesion in Latin and in Old Italian has some methodological shortcomings, for example, the *volgarizzamento* reflects only one idiolect, that of the translator. In addition, the translation serves a different purpose than the original. The *volgarizzamento*, in Tobler's opinion, is probably an exercise in translation, done by a student.⁵ Moreover, the Latin text is not written in Classical or Vulgar Latin, but in Medieval Latin.

Despite these possible objections, the *volgarizzamento* of Pamphilus clarifies certain differences in sentence connection in Latin and in Old Italian.

Halliday and Hasan, in their work *Cohesion in English*, isolate five possible means of sentence connection found in English texts. These are: reference (e.g., pronouns); substitution (by means of such words as *do*); ellipsis (which is substitution by zero); conjunction (such as *but*, *then*, etc.); and lexical cohesion (e.g., the use of a superordinate, a synonym, etc.).⁶ Reference, conjunction and lexical cohesion are also found in Latin works as a means to achieve textual cohesion.⁷ The following analysis is concerned with the first two kinds of cohesion: reference and conjunction.

"In the case of reference," Halliday and Hasan write, "the information to be retrieved is the referential meaning, the identity of the particular thing or class of things that is being referred to; and the cohesion lies in the continuity of reference, whereby the same thing enters into the discourse a second time".⁸ Generally, since reference has the semantic property of definiteness or specificity, it is expressed by means of pronouns and definite articles.

In the *volgarizzamento*, reference is frequent both in the Latin and the Old Venetian version. The following examples, however, illustrate that reference is expressed differently in the two languages.

1. Quere tuis alias incestis moribus aptas

Damanda ecerca altre fanteselle lequal sea usade ali toi costumi

Quas tua falsa fides et dolus infatuat.

E le qual polceale la tua falsa fe elo to engano debia atradire.
(11. 191-192)

2. Fert galatea mei sola doloris opem.

Mai solamentre galatea porta lo autorio dela mia dolia.

Causa mee mortis hec est et cura salutis.

E galatea sie la ocausione dela mea morte ela cura dela mea sanitate

Qua si non pociar tunc placet ut moriar.

La qual galatea sieu no la avrai adonca ie plase geu dibia morire.
(11. 460-462)

In the *volgarizzamento*, therefore, the translator opts for a repetition of a noun clause (or uses a synonym: see ex. 1) each time there is a relative or a demonstrative pronoun in Latin. Since the Latin forms of the pronouns are inflected for gender number and case, their syntactic, semantic and textual functions are clear. On the other hand, once the Old Venetian form *qual* lost the final *-e*, i.e., < QUALE(M), it became ambiguous and therefore needs the support of the definite article. This is inflected for gender and number, hence, *la qual*. The anaphoric use of the noun makes the reference to an item in the preceding text unequivocal: *la qual galatea*. In prose, this construction

is quite frequent when sentences are joined together in a text. Here are some examples from other Italian works:

The Novellino (Old Florentine, XIII cent.)⁹

Leggesi della bontà del Re giovane, guerreggiando col padre, per lo consiglio di Beltramo. Lo quale Beltramo si vantò, ch'elli avea più senno che niuno altro.

The Storie of Paolo Orosio (transl. into Old Florentine, XIII cent.)¹⁰

Tanta fue la moltitudine de l'oste che raunò, e l'abbondanza de le navi, ch'a pena i fiumi a dare bere a la tera dare via e il mare a ricevelli pareva cha bastase a tutta questa oste, ne' nostri tempi da non poter credere. Il quale novero di gente più malagevolmente sarebe ogi a raunare ch'alotta a vincere.

The Decamerone of Boccaccio (Old Florentine, XIV cent.)¹¹

... per ciò che a niuno convenevole termine mi lasciava contento stare, più di noia che bisogno non m'era spesse volte sentir mi facea. Nella qual noia tanto refrigerio già mi porsero i piacevoli ragionamenti ...

Regarding demonstrative pronouns or adverbs of place which refer to a general idea expressed in the preceding or subsequent text, they are translated in the following manner in the Panfilus:

3. Decresitque color visque decorque meus.

Elo mieu colore si decresse ela mea força ela mea belega si se destruge

Hoc nulli dixi nec que michi vulnera fecit.

Questa causa no disi ne no ai dita ad alcun ne cui faesse ne abia fate queste plage a mi no ai manifestado. (11.44-45)

4. Pluribus expeditor et adhuc me plura coercent.

Eu fio despedegato de plusor cause et ancora plusor cause me destrengé.

De quibus ipse meum nescio consilium.

Dele qual cause eu medesimo no sai lo meu conseio. (11.253-254)

5. En mala nostra vides en nostra pericula nosti.

Oramo o madona venus voi vede li nostri mali e si cognose li nostri periguli.

Inde precor precibus mitis adesto meis.

Per la qual causa eu ve prego ke voi debiai esser humele ali mei pregi. (11. 61-62)

6. Hoc concedo satis vel tu vel quilibet alter

Questa causa concedeu asai e ke tu e ke gascun altromo

Ut veniat salvo honore meo.

Venga e vaa empermordeco salvo sempre lo mieu onore. (217-218)

These examples show that in the *volgarizzamento*, anaphoric and cataphoric 'general' reference is expressed by means of a noun clause containing the word *causa*. This construction is equivalent to the Latin demonstrative pronouns and some adverbs. The word *cosa* acquires a textual function in this construction: it refers backwards and forwards to something expressed in the text. The meaning of the lexeme depends on the context: in examples 3 and 4, it has the Romance meaning of "thing", "matter"; in example 5, it has a causal connotation, and therefore carries the etymological meaning of the Latin CAUSA "cause", "motive", "reason". There are many examples in Old Italian texts of constructions with the word *causa* where it has the anaphoric or cataphoric function, such as *per la qual cosa, la quale cosa, con ciò sia cosa che*, etc.

Another means through which reference is possible in Old Italian involves the use of the definite article. Many scholars have investigated the anaphoric use of the Latin demonstrative ILLE.¹² According to Renzi, this particular function of the Latin demonstrative pronoun ILLE makes the development of the Romance article possible.¹³ In the *volgarizzamento*, definite article accompanies almost all nouns, even when they are mentioned in the text for the first time. Consider the first two sentences of the ms:

7. Incipit liber panfili

E panfilo parla enlo comengamento sovra si medesimo.

Vulneror et clausum porto sub pectore telum.

*Eu panfilo son enplaga e port lo lançon goe lamor serad enlo
mieu pieto. (11. T-2)*

It is likely that the use of the definite article in these sentences has the same function as that found in titles of books. Weinrich suggests that since the definite article in a title of a book does not refer to any preceding text, it has the function of arousing the reader's curiosity, because the meaning of the title becomes clear only when the whole book is read.¹⁴ The definite article which precedes the noun *amor* has a similar function: the reader is motivated to continue.

To sum up, then, the change from Latin to Old Italian in view of the cohesion of a text through reference brought about substantial transformations in the formal means through which sentence connection is achieved. Specifically, reference, which is realized in Latin texts by means of demonstrative or relative pronouns, is marked in Old Italian by noun phrases. This change is due not only to the fact that some forms of the Latin demonstratives are short and therefore subject to phonetic corrosion; but also, and perhaps more importantly, in the Old Italian works, reference to an element in the preceding or following text tends to be lexically explicit. Moreover, textual functions of some Latin demonstratives have changed, for example, ILLE becomes the definite article. For these reasons, noun clauses repeating the same noun found elsewhere in the text, or noun clauses containing the noun *causa/cosa* are common.

Conjunctions are the second means through which cohesion can be expressed. Halliday and Hasan write that conjunctions provide "grammatical cohesion with a lexical component in it" and as such they are not only an anaphoric relation.¹⁵

One of the most transparent changes from Latin to Italian occurs in the lexical forms of conjunctions, especially subordinating conjunctions. It is generally believed that transformations in the system of conjunctions are due to phonetic and semantic reasons.¹⁶ While it may be partly true for certain Latin conjunctions, it is likely that there are other reasons why almost no Latin conjunction survived in Old Italian.

In the *volgarizzamento* of *Pamphilus*, Latin conjunctions are almost invariably rendered as prepositional expressions with *qe* "that":

8. Nam solet amoto plus ledere proximus ignis
Empergo qelo folo lo qual e da pruvo suol plu danar (l. 37)
9. Nocte dieque satis pueriliter ille laborat
Quelo di engual mentre conla note altresì com un fantulin se travaia
Nam si nula refert premia duricies. (11.559-560)
Et empermordego la toa durega no reporta alui nesun gueerdone.
10. Conqueror est que mee iustissima causa querele
Et eu me laimento e la caoson dela mea laimentanga sie molto iusta
Cum sit consilii copia nulla mihi
Cumgosea causa ke nesuna abundanga de conseglo sea ami. (9-10)
11. Cum modo sit dives cuiusdam nata bubulci
E cumgo sea causa qela femena sea nada dun bevoleo pur kela sea rica
Elegit e mille quemlibet illa virum
Ella lege de mille omni uno lo qual vole en marido (53-54)
12. ...
Ut citius possis victor amore frui
Ago ke tu vencedor plu tosto posse usar lo so amore (l. 132)

The translator opts for grammatical and lexical cohesion even in places where only logical connection appears between phrases in the Latin version, for example:

13. Omnia postposui tu sola mihi placuisti
Mai eu lasai star edemeti tute quele cause lequal ili menprometeve. E tu sola plasisti ami.
Respuerem pro te quicquid in orbe manet
Congoseacausa qeu refudarave per ti e per lo to amore tute le cause le qual e enquesto mondo
(171-172)

14. Terge tuas lacrimas prospice quid facias
Forbi via le toi lagreme equarda que tu face
 Conspicit animos inanis egestas
Qe li boni animi si guarda etempra le soi male volontadhe
sovenge fiadhe. (466-467)

Other Old Italian texts contain an abundance of examples of conjunctions. Although some conjunctions are found in only a few vernaculars (e.g., *empermordegò* in North Italian languages)¹⁷, differences in the forms of conjunctions are phonetic, as in *pergo* in Old Venetian and *perciò* in Florentine (cf. Boccaccio, I, C,2; II, 2,15; etc.).

In summary, the process of change from the Latin to the Old Italian system of conjunctions is due to factors involving all levels of linguistic structure. Some Latin conjunctions, because they were phonetically weak (as Tekavčić and others note), or semantically polyvalent (such as CUM), had to be replaced.¹⁸ In addition to these phonetic and semantic factors, Latin itself was undergoing a transformation in the placement of certain conjunctions. Marouzeau dedicates many pages to examples of conjunctions which frequently were placed second in the sentence in Old Latin. Later Latin works show vacillation in the placement of conjunctions with a progressive movement to an initial position.¹⁹ In order to facilitate the explanation of the radical change in the system of conjunctions, two other factors can be added to the above.

Firstly, all Romance languages, and hence Old Italian, tend to replace a number of Latin synthetic grammatical forms with analytic ones, for example, case endings became prepositional constructions; the one preterite form became two in the *passato prossimo*, etc. Conjunctions form a part of this transition. The preposition PER, for example, is used frequently to build conjunctions with causal meaning, as Ehrlicholzer showed.²⁰

Secondly, the manner in which sentences are put together to form a text differs in Latin and in Old Italian. In Latin, conjunctions such as NAM, CUM, UT have the same textual function and meaning as their Old Italian equivalents *perciò che*, *conciosia cosa che*, *accio`che*. The Latin conjunctions, however, lack a specific lexical connection to the preceding or following text. This lexical connection is evident in the Old Italian conjunctions through their etymology. For example (the sign $\rightsquigarrow$ stands for 'is paraphrased by'):

NAM	$\rightsquigarrow$	*PER ECCE HOC QUOD	>	perciò che	"therefore"
UT	$\rightsquigarrow$	*AD ECCE HOC QUOD	>	accio`che	"so that"
UT	$\rightsquigarrow$	*ECCU(M) SIC QUOD	>	così che	"so that"
QUANDO	$\rightsquigarrow$	*AD ILLA(M) HORA(M) QUOD	>	allora che	"when"

These etymologies indicate that paraphrasing (which is one means to alter the structure of discourse, as Pike and Pike

suggest)²¹ of the Classical Latin conjunctions results in the creation of the Italian conjunctions. Notable is the use of the demonstratives HOC and ILLE in the construction of these conjunctions, since they have a referential function. Whether or not paraphrasing is a universal of textual change remains to be seen.

In conclusion, cohesion through reference and conjunctions underwent significant changes in its development from Latin to Old Italian. Reference, realized in Latin by means of demonstrative and relative pronouns, is achieved in Old Italian by means of noun phrases which have the structure definite article + qual(e) + noun. This is due to a change in the textual functions of some Latin demonstratives. Latin conjunctions experienced another kind of textual transformation: replacement at the textual level. It was, in fact, paraphrasing, using some demonstratives and QUOD. According to Herman, conjunctions constructed with QUOD or QUIA were not infrequent already in Vulgar Latin.²² Nominal constructions and paraphrasing emerge as prime examples of textually conditioned change.

NOTES

- ¹ The literature dealing with linguistic analyses of 'text' is vast; see, for example, Dressler & Schmidt (1973) and Gülich & Raible (1977).
- ² For detailed comments on a number of theories, see Gülich & Raible (1977).
- ³ Hoenigswald (1963:26-27) is probably referring to "ideal" rather than actual translations.
- ⁴ The ms was first published in Tobler (1886-1888: 177-254); parts of it appear, among other collections and anthologies, in Monaci (1955:182-186).
- ⁵ Tobler (1886-1888:233) suggests this hypothesis which has recently been accepted by Haller (1976:50).
- ⁶ Halliday & Hasan (1976:4).
- ⁷ For Tacitus, see Mendell (1911) and for Livy, see Nye (1912).
- ⁸ Halliday & Hasan (1976:31).
- ⁹ The Novellino, p. 31, novella XIX.
- ¹⁰ Monaci (1955:542, ll. 9-13).
- ¹¹ The Decamerone, Introduzione, 4, 3.
- ¹² They are referred to in Renzi (1976:11)
- ¹³ Renzi (1976:23 and passim).
- ¹⁴ Weinrich (1977:62).
- ¹⁵ Halliday & Hasan (1976:6 and 231).

- 16 Tekavčić (1972:634-635).
- 17 Rohlf's (1969:171).
- 18 Tekavčić (1972:635).
- 19 Marouzeau (1949:105-122).
- 20 Ehrliholzer (1965:122).
- 21 Pike & Pike (1972:48).
- 22 Herman (1963:263).

REFERENCES

- Boccaccio, G. *Il Decamerone*. V. Branca (ed.). Firenze: Accademia della Crusca, 1976.
- Dressler, W. and S.J. Schmidt. 1973. *Textlinguistik. Kommentierte Bibliographie*. München: W. Fink.
- Ehrliholzer, H.P. 1965. *Der Sprachliche Ausdruck der Kausalität im Altitalienischen*. Winterthur: Keller.
- Gülich, E. and W. Raible. 1977. *Linguistische Textmodelle. Grundlagen und Möglichkeiten*. München: W. Fink.
- Haller, H. 1976. "Il volgarizzamento del 'Pamphilus de Amore' in antico veneziano" *Studi di grammatica italiana* 5. 47-66.
- Halliday, M.A.K. and R. Hasan. 1976. *Cohesion in English*. London: Longman.
- Herman, J. 1963. *La formation du système roman des conjonctions de subordination*. Berlin: Akademie Verlag.
- Hoenigswald, H.M. 1963. "Are there universals of linguistic change?" in H. Greenberg (ed.). *Universals of Language*. Cambridge, Mass.: MIT Press.
- Marouzeau, J. 1949. *L'ordre des mots dans la phrase latine. Les articulations de l'énoncé*. Paris: Société des Belles Lettres.
- Mendell, C.W. 1911. *Sentence Connection in Tacitus*. New Haven: Yale University Press.
- Monaci, E. 1955. *Crestomazia italiana dei primi secoli*. Roma: Società Dante Alighieri.
- Il Novellino*. P.P. Addoli (ed.). Milano: BUR, 1957.

- Nye, I. 1912. *Sentence Connection Illustrated Chiefly from Livy*. PhD Dissertation, Yale.
- Pike, K.L. and E.C. Pike. 1972. "Seven Substitution Exercises for the Structure of Discourse" *Linguistics* 94. 43-52.
- Renzi, L. 1976. "Grammatica e storia dell'articolo italiano" *Studi di grammatica italiana* 5. 1-42.
- Rohlfs, G. 1969. *Grammatica storica della lingua italiana e dei suoi dialetti. Sintassi e formazione delle parole*. Torino: Einaudi.
- Tekavčić, P. 1972. *Grammatica storica dell'italiano. Morfo-sintassi*. Bologna: Mulino.
- Tobler, A. 1886-1888. "Il Panfilo in antico veneziano col latino a fronte" *Archivio Glottologico Italiano* X. 177-254.
- Weinrich, H. 1977. "Sintassi testuale dell'articolo francese" in M.E. Conte (ed.). *La linguistica testuale*. Milano: Feltrinelli. pp. 53-65.

SOME IMPLICATIONS OF LISLAKH

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1.1. Introduction. Progress in the study of Lislakh (see Hodge 1972, 1978, 1981 a. & b. for prior discussion) may be conveniently stated in Hymes' terms:

The three stages in genetic classification are hypothesis, proof, and establishment... When no inference other than that of genetic connection is possible, a relationship is proven. (1959:52)

Significant sets of sound correspondences have been found, although a great deal needs to be done before a full set is available, along with the resultant reconstructions of proto-Lislakh vocabulary. It is therefore my view that the Lislakh (hereinafter LL) hypothesis is now at the proof stage and well on the way to establishment. It is therefore useful to review some of the implications which result from the acceptance of the hypothesis. These are divided for convenience into cultural implications and linguistic ones (with no implication that language is not a part of culture).

1.2. Summary Statement. The cultural implications selected for discussion are:

- 2.1. The earliest traceable homeland of the Indo-European (hereinafter IE) peoples is the same as that of the Lisramic (hereinafter L) peoples on the Central Nile.
- 2.2. The IE peoples separated from the L peoples prior to the break-up of the latter group.
- 2.3. The earliest evidence of IE languages -- that from the Near East -- reflects part of the path taken by these peoples from the Sudan to their known later habitats in Europe and elsewhere.
- 2.4. The IEs preceded the Semites and historical Egyptians in the Near East, and much more of their substratal remains should be recognizable from that area.
- 2.5. Many cultural features found in common between the two groups may more plausibly be considered to have had a common origin.

The linguistic implications selected are:

- 3.1. Sound-meaning combinations survive as recognizably the same in linguistic units separated for up to 20,000 years. This includes allomorphic variants.

- 3.2. More doublets (or reflexes of dialect variation) may be identified in both groups.
- 3.3. The internal relationships of the IE languages, and the known isoglosses among them, need re-examination with regard to possible re-orientation as to direction of spread.

Certain of these call for more discussion than others, but something should be said on each account. (Paragraph numbers refer to above summary.)

2. The cultural implications.

2.1. L and IE must have had a common homeland. It is presumed that pL was associated with the microlithic culture found on the Central Nile around 20,000 B.P. (Munson 1977, Hodge 1978). As this culture spread from there into areas where L peoples were later found, this is a reasonable deduction. The Central Nile, as the earliest geographic location for these peoples, is by implication that of the pLL speakers, hence of the IEs as well.

A corollary to this implication is that it is in some instances possible to associate, with some assurance, language data with archaeological assemblages without contemporary linguistic evidence. We are constantly reminded of the hazards of such a procedure, both by admonition and by the example of those who have thereby made false associations. Readable writing goes back only 5000 years. It is significant that what is apparently writing is found in the Balkan area about 7000 B.P. (Gimbutas 1974:85-87). There is therefore hope that linguistic evidence may be found for a part of the 10-15,000 inscriptionless years crucial to our hypothesis.

2.2. Omotic has been considered to be the most divergent of the L languages (Bender 1975), but examination of an Omotic word list (such as that in Fleming 1974) leads one to conclude that Omotic is closer to the rest of L than it is to IE. One therefore concludes that IE peoples left the area first. As the break-up of the L group began some 15,000 years ago, it follows that the LL peoples began to break up prior to that, one may hazard 20,000 years ago. At that time much of Europe was covered by glaciers, and it is unreasonable to look for the ancestors of the IEs in any of the hitherto suggested homelands at this time.

2.3. By 7000 B.C. there existed in the Balkan area the culture complex called "Old Europe" by Gimbutas (1974). It was a remarkable culture, complete with the aforementioned system of writing. Naturally, some less civilized but physically stronger group destroyed it. These conquerors Gimbutas believes were IEs. However, Renfrew has suggested, on archaeological grounds, that the historic Greeks were descendants of the peoples who settled there in neolithic times (1973), raising the possibility that the

Old Europeans were themselves IEs, as their conquerors may also have been. A similar view is taken by Georgiev, who places the IE peoples in central and eastern Europe, as well as Anatolia, by the sixth millennium B.C. (1966:385-396). Considered from the LL point of view, this is not only possible, but probable. Our earliest historical records of the IEs are from the Near East: Anatolia, Mitanni, Palestine-Syria, possibly Egypt and the Sinai (Hodge 1981a). If they began their trek over 15,000 years ago, their path from the Sudan would logically lead through these areas. That they went beyond into what is now Europe is evidenced by the pIE vocabulary, full of beeches, wolves, and the like. While there is nothing which prevents one from believing that the group all went Europe-wards in neolithic times and that some returned later as Hittites, etc., it is, I believe, more probable that the Anatolian speakers were part of those left along the way as the main body went on to the west, north and east.

2.4. All of this implies that the IEs were an important ethno-linguistic factor in Egypt and the Levant from very early times. Naturally, the honeyed IE words dropped by these speakers as they trekked over many millennia have nearly all been devoured by the ants of time. The IE survivals in the area are rarely recognizable for what they are, but more and more are being identified (cf. Hodge 1981a). Some onomastic and other materials can be identified as IE with a fair degree of probability. For example, Sumerian TEMEN 'foundation' has for long been considered to be connected with Greek *tēmenos* 'sacred enclosure'. It is a loan, but from which direction? The occurrence of *tēmenos* in a structural ('homological') context (Palmer 1974:13) gives support to the view that it is an inherited word, derived from pIE *tem- 'cut'. It is therefore an IE word in Sumerian, probably a direct loan from some long-lost Near Eastern IE language.

From early dynastic times one of the traditional enemies of the Egyptians was a people in Egypt itself, identified as *rxwt* (later *rxyt*, pre-Coptic *lhe*), translated 'plebeians; mankind' by Gardiner (1947.1:98*). It is clear from his discussion that the word designated a particular group of people within Egypt, as opposed to *rmč* (the ordinary word for 'people'); *hnmmt*, etc. He quotes Gunn as saying, "we may conclude that they were a race dwelling in the Delta, or a little south of it: originally hostile to the Upper Egyptian kingdom, they later became subjects of the united monarchy" (102*; see also 2.272*). The word should be connected with IH **laxwos* 'army, people' (Hittite *laxxa-* 'campaign', *laxxiyāi-* 'carry on war', Greek *laos* 'people'; cf. Sturtevant 1942:35). It is the name these IE peoples used of themselves, and by which their conquerors the Egyptians knew them, therefore an IE loanword in Egyptian (revise Hodge 1968:20 accordingly). Prior to the LL hypothesis we had no real clue as to the language of the pre-Egyptian inhabitants (cf. Ranke 1939:15-16).

2.5. A number of cultural elements have been found to be in com-

mon to both L and IE. Some of these are of limited distribution, but their occurrence in both spheres makes it possible that they were carried by the IEs from the Near East. Whether these are to be attributed to common inheritance from pLL times must be determined by later investigation.

We note, for example, the occurrence of both the ship of the sun (travelling by night) and the sacred bull, in Egypt (for L) and in Scandinavia (for IE; Davidson 1969:22-23 [ship], 25 [bull]). With LL located in an area of Africa later known for its cattle culture, common origin for the sacred bull is very likely (see for Egypt and Africa, Frankfort 1948:162-68).

Another cultural feature is the matter of tutelary spirits, in connection with which we offer an item or two of linguistic evidence seen from the LL point of view. In Rome one has the household gods and ancestor images, much as one did in the ancient Near East, as well as other parts of the world. There is the same ambivalence associated with these: they can be helpful or inimical. Ovid, going into exile, referred to the 'hostile Penates' of his household shrine (see *Tristia* 1.3.43-46, taking *adversus* as 'hostile'). In Egypt we have letters written to the dead both to enlist their help and to get them to stop hurting the living (Gardiner-Sethe 1928). In the Old Testament one may expect both good and evil from the same deity (e.g., I Sam 16.14). This ambivalence results in similar semantic shifts in both language groups: Eg. *nkr* 'god' is the same root as Akk. *nakru* 'enemy' (Cohen 1947:186); Skt. *devas* 'god' is the same word as Av. *daēvas* 'devil'. I suggest that L **nkr* 'inimical, god' is related to Hitt. *kurur-* 'enemy' and to Lat. *sacer* 'sacred', this last being an s-formation. Such a connection could not have been made before sound correspondences had been set up and the recognition of the affirmative possibilities of s- and n- (cf. Hodge 1981b, 1971a). In addition to the fact that the ancestrally extended family is widespread among the cultures of the world, it is also surprising how many of the pantheons are described in ancestral terms (cf. Hodge 1971b). It may also be noted that the word for one kind of priest in Latin is *flāmen*. This has been connected by Dumézil with Skt. *brahman* (1970:211, 580n7). I think it probable that it goes back to a pLL **mb-r/l-* and is related to Akk. *baru*: 'a seer' (*baru*: 'to see', Eg. m33).

As noted above, one of the most striking features of the Old Europe culture is what appears to be writing, antedating that in the Near East. It has long been a matter of discussion as to whether writing was first developed ('invented') in Egypt or in Sumer. The Old European inscriptions add a new dimension. The LL hypothesis, implying as it does the emergence of the IE peoples from the Central Nile into the Near East and then into the Balkans, offers us a possible link between these three centers -- the IEs.

3. The Linguistic Implications.

3.1. The most important implication for linguistics is the self-

evident one of the great time depth to which this comparative study has been able to take us.

3.2. A corollary of the time depth involved is the enormous span of time within which we must somewhere place reconstructed *pIE*. One may aim at the last phase of common speech prior to the division into the individual branches (Kammenhuber 1969:340). At the same time one is aware that the reconstructed morphs are not all of the same antiquity (cf. Hockett 1958:522-23). LL, offering as it does a far earlier stage, makes it possible to clarify some of the relative chronology involved and to recognize some allomorphy and dialect variants.

The laryngeal hypothesis, particularly in its Indo-Hittite form, is the best known effort to clarify any of the relative chronology problems of IE (cf. Sturtevant 1942, Lindeman 1970). In L the variant effects of the same 'laryngeal' in, e.g., Semitic (**raʔs-* > Heb. *ro:s*, Akk. *re:s-*) throw doubt on the heavy reliance on a particular laryngeal consistently to produce the same vowel quality. The existence of long vowels along with laryngeals in L (e.g., Semitic) throws doubt on that aspect of the theory which attributes all vowel quantity to laryngeals. On the other hand, both vowel quality and quantity changes due to laryngeals are supported. These facts have been long known, but the establishment of a genetic relationship between the two will enable us to draw more definite conclusions about specific morphs. On the whole LL points to a less rigid interpretation of the laryngeal role.

As has been shown elsewhere, LL has enabled us to understand such phonological alternations as *m/bh* in IE (Hodge 1981b). Another set is *l/n*, possibly including *r/n*. This is found in a negative element common to both groups, as in, e.g., Hitt. *natta* 'not', *le:* 'that not', Lyc. *ni*; Ar. *la:* 'not', Eg. *n* 'not'. This may explain the variation in Hitt. *la:man-*, Skt. *na:man-*, Lat. *no:men* 'name'. The reconstruction of a *pIE* **no:men-* is an arbitrary choice of *n* over *l*; note also that the Slavic forms without *n-* (SC *imen-*) need explanation. The *l/n* alternation is found in a number of L words (e.g., Eg. *ns*, Coptic *las* 'tongue'). One must reconstruct a proto-phoneme to account for this variation. As it also occurs in IE, such a phoneme would be posited for *pLL*. It is possible that this phoneme also lies behind the *r/n* alternation so well-known in IE (e.g., Hitt. *wadar* G *wedenas* 'water').

One of the implications of LL is therefore that one must recognize in comparative linguistics sets of sound correspondences where more than one value may obtain but where the conditioning factors remain unknown. In actual practice this has been done all along, but the ideal of sound correspondences without exceptions has tended to obscure the issue. Very good examples are to be found among the LL labials, which are treated elsewhere (Hodge 1981b), from which two illustrations may be taken. Eg. *bʔt* 'bee, honey' on the L side is matched by IE **bhei-* 'bee' and **medhu-* 'honey'. These are all reasonably attributable to *pLL* **mb-*

(*^mbe?- ?), the *^mē- of *^medhu- reflecting an allomorph in ^m-, while *^bhei- reflects one in ^{bh}-. Another example is represented by Eg. ^m'in', bw 'place' C. ^ma for L and Gk. -phi 'at' (^oresphi 'in the mountains') reflecting *^{bh}- and OChSl ^mesto 'place', with ^m-. With a deeper control, such as LL, the alternates are given their place even without the highly desirable knowledge of the conditioning factors.

3.3. The internal relationships of the IE languages need careful re-examination, as does the evidence for the layering of languages - IE substrates to IE, and the evidences for direction of spread. It is not that these have been neglected (cf. Birnbaum-Puhvel 1966, Kammenhuber 1969:342-49) but rather that we need to look at all the data with the LL hypothesis in mind, with its general reversal of the direction of the movement of peoples. At the same time one must keep all options open regarding a particular movement at any given time.

The isoglosses to be considered include the well-known ones, such as centum/satem (cf. Kammenhuber 1969:341), m/bh in case endings (resolved, Hodge 1981b), the r medio-passive (cf. Kammenhuber 1969:325-26, 345-46), the augment, final -n vs. -m (Kammenhuber 1969:343), etc. LL throws light on several of these. The palatalization characteristic of the satem languages is reflected in L (Eg. č, exx. Hodge 1981b), and the distinction is therefore attributable to pLL. The m/bh alternation goes back to the pLL *^mb mentioned above. The augment has a close parallel in Egyptian, where the clause initial particle ?w becomes the Coptic circumstantial verb prefix e- (e.g., Polotsky 1960). It is probably the same etymon (chronomorph) as the IE augment. The distribution of the latter is interesting: Hellenic-Armenian-Iranian-Indic, covering the southern tier but leaving out Anatolian. (Let the reader speculate.) The -n vs. -m is curiously matched by the Semitic mimation (Akk. kalbum 'dog') vs. nunation (Ar. kalbun 'a dog'). No mention has been made of the r medio-passive; any L relatives are as yet unknown.

These brief remarks are sufficient to call attention to the manner in which our understanding of IE may be enriched by the data and the implications called forth by the LL hypothesis.

References

- Bender, M. Lionel. 1975. Omotiic: A New Afroasiatic Language Family. (Southern Illinois University Museum Series, 3) Carbondale.
- Birnbaum, Henrik and Jaan Puhvel. 1966. Ancient Indo-European Dialects. Berkeley: University of California Press.
- Cohen, Marcel. 1947. Essai comparatif sur le vocabulaire et la phonétique du chamito-sémitique. (Bibliothèque de l'École des Hautes Études, 291) Paris: Honoré Champion.

- Davidson, H. R. Ellis. 1969. Scandinavian Mythology. London: Paul Hamlyn.
- Dumézil, Georges. 1970. Archaic Roman Religion. Chicago: University of Chicago Press.
- Fleming, Harold. 1974. "Omotic as an Afroasiatic Family" Studies in African Linguistics, Suppl. 5:81-94.
- Frankfort, Henri. 1948. Kingship and the Gods. Chicago: University of Chicago Press.
- Gardiner, Alan H. 1947. Ancient Egyptian Onomastica. 3 vols. London: Oxford University Press.
- Gardiner, Alan H. and Kurt Sethe. 1928. Egyptian Letters to the Dead. London: Egypt Exploration Society.
- Georgiev, Vladimir I. 1966. Introduzione alla Storia della Lingue Indoeuropee. (Incunabula Graeca, 9) Rome: Edizioni dell'Ateneo.
- Gimbutas, Marija. 1974. The Gods and Goddesses of Old Europe: 7000-3500 B.C. Berkeley: University of California Press.
- Hockett, Charles. 1958. A Course in Modern Linguistics. New York: MacMillan.
- Hodge, Carleton T. 1968. "Afroasiatic '67" Language Sciences 1:13-21.
- _____. 1971a. "Afroasiatic S-Causative" Language Sciences 15:41-43.
- _____. 1971b. "Is Elohim Dead?" AnL 13.6:311-19.
- _____. 1972. "Lisramic" Language Sciences 20:13-16.
- _____. 1978. "Lislakh" The Fourth LACUS Forum, pp. 414-22. Columbia: Hornbeam Press.
- _____. 1981a. "Indo-Europeans in the Near East" AnL (forthcoming).
- _____. 1981b. "Lislakh Labials" AnL (forthcoming).
- Hymes, Dell. 1959. "Genetic Classification: Retrospect and Prospect" AnL 1.2:50-66.
- Kammenhuber, Annettes. 1969. "Hethitisch, Palaisch, Luwisch und Hieroglyphenluwisch" Altkeinasatische Sprachen, ed. by J. Friedrich et al. (Handbuch der Orientalistik 1.2.1-2.2) Leiden: E. J. Brill.
- Lindeman, Fredrik Otto. 1970. Einführung in die Laryngaltheorie. (Sammlung Götschen, 1247/1247a) Berlin: Walter de Gruyter.
- Munson, Patrick J. 1977. "Africa's Prehistoric Past" Africa, ed. by P. M. Martin and P. O'Meara, pp. 62-82. Bloomington: Indiana University Press.
- Palmer, Leonard R. 1974. "Arya-. A Homological Sketch" Antiquitates Indogermanicae. Gedenkschrift für Hermann Guntert, ed. by Manfred Mayrhofer et al., pp. 11-19. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
- Polotsky, H. J. 1960. "The Coptic Conjugation System" Or. 29:392-422.
- Ranke, Hermann. 1939. "The Beginnings of Civilization in Egypt" JAOS 59, Suppl. 3-16.
- Renfrew, Colin. 1973. "Problems in the General Correlation of Archaeological and Linguistic Strata in Prehistoric Greece:

- the Model of Autochthonous Origin" Bronze Age Migrations in the Aegean, ed. by R. A. Crossland and A. Birchall, pp. 263-76. London: Duckworth.
- Sturtevant, Edgar H. 1942. The Indo-Hittite Laryngeals. (WDWLS) Baltimore: Linguistic Society of America.

IV

LANGUAGE ECOLOGY

IDIOLECT, DIALECT, SOCIOLECT: WHAT ABOUT "PSYCHOLECT"?

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The description of how language manifests itself as a speech phenomenon has given rise to three terms based on the suffix *-lect*, which derives from the Greek verb *legein* 'to speak'. The terms are, of course, *idiolect*, *dialect* and *sociolect*. With these terms, linguists have sought to compass variation, or diversity, in the speech manifestations of language. The terms *language* and *speech* are used here in the usual way in linguistics; i.e., the former refers to the abstract knowledge of rules or patterns of structure, and the latter to the concrete physical manifestations of these patterns in communicative acts. To use Halliday's (1970:42) words, speech constitutes "a simultaneous selection from among a large number of inter-related options." I will refer to the systematic speech manifestations of language as *lects*, a term formed from the *-lect* suffix of *idiolect*, *dialect*, and *sociolect*. The study of *lects* is of basic importance in linguistics because the structural and lexical options available in a language, or speech, community are linked directly to specific *lects*.

The term *idiolect* was coined by Bloch (1948:7) to designate the version of a language spoken by a particular individual. It refers, in other words, to the specific structural and lexical peculiarities of a given individual in a given speech community. Hall (1951) was among the first to point out that idiolectal manifestations constitute the only observable reality for linguists. Moreover, he suggested that this term enabled the linguist to define *dialect* better. This view was elaborated upon by Hockett in his classic 1958 work in which he gives what has become perhaps the most widely accepted functional definition of *dialect*. According to Hockett, a *dialect*, like a language, is simply a collection of more or less similar idiolects, with this difference: "when both terms are used in a simple discussion, the degree of similarity of the idiolects in a single dialect is presumed to be greater than that of all the idiolects in the language" (1958:322).

The term *dialect* has been used to describe both *local* and *non-local* variation in language, to use Bloomfield's (1933:47) terminology. Local variation refers to the differences in structure and vocabulary due to geography. These differences are sufficient enough for determining separate lectal manifestations of a language, but not quite for determining separate languages. Local dialects may be said therefore to demonstrate *interlectal* differences. Non-local dialects, on the other hand, demonstrate what may be called *intralectal* differ-

differences. These differences are determined by social context. Although the terms *register*, *style* and *social dialect* have all been used to designate intralectal variation, linguists have felt the need to coin a term consistent with *idiolect* and *dialect*, and have consequently coined the term *sociolect*. It is, in fact, the common practice today to use *dialect* when referring to local variation and *sociolect* when referring to non-local variation. Actually, as Hall (1980) has made abundantly clear, geographical lects can also result from the pressures associated with standardization. In Italy, as is well known, there exist regional lects called *italiani regionali* which are different from local dialects in that they have characteristics of both the standard language and the local dialects. They are the result of the concomitant superstratum pressure of the standard language and the substratum pressure of the local dialects. In accordance with previous terminological practice, I would like to suggest the term *geolect* for these regional variants. And for the sake of consistency, perhaps the term *panlect* would be an appropriate one to designate a standard language.

These five terms--*idiolect*, *dialect*, *sociolect*, *geolect*, *panlect*--encompass three types of speech manifestation. Using Dittmar's (1976:107-110) typology, we can call these: standard, regional and social. A *panlect* refers to the standard form used by a speech community which has been legitimized and institutionalized as a consequence of various social, economic, political and cultural processes. A *panlect* refers, in other words, to *pattern shared by all*. As Garvin (1964) has observed, panlects provide a guiding normative frame-of-reference. *Dialect* and *geolect* refer to interlectal varieties which have become differentiated through geographical diffusion. These are regional varieties. *Sociolect* refers, of course, to social variation. Haden Elgin (1979:168) gives a humorous illustration of three sociolectal versions of 'good-bye' as spoken by a typical urban seventh-grader:

- (1) "Good-bye, Mr. Martin."
- (2) "See ya later, Mom."
- (3) "Okay man, I gotta split."

The first one is appropriate in a classroom setting; the second in a home setting; and the third in a peer group setting. Clearly, sociolectal choices are governed by criteria such as the relationship, roles, ages, sex, etc. of the participants in speech acts. The identification of these criteria has been the subject of many studies, such as those by Austin (1962), Joos (1967) and Halliday (1973) to mention but a few of the more well known ones. In sum, *dialect*, *geolect* and *sociolect* refer to *group pattern*. *Idiolect*, on the other hand, refers to *individual pattern*.

It is precisely when referring to individual pattern that a terminological gap *vis-à-vis* lectal manifestations emerges. *Idiolect*

refers simply to the idiosyncratic structural and lexical choices made by an individual. What about those choices made within one's own idiolectal capabilities which are intended to influence behavior, to draw attention, to flatter, to persuade, etc.? In other words, there are some common manifestations of individual speech pattern which are not covered by any of the terms discussed previously. These manifestations are determined by psychological motivations rather than by structural-lexical idiosyncracies, geography or social setting. In accordance with previous terminology, I will call these manifestations *psycholectal*. The remainder of this brief paper is devoted to the discussion of some psycholectal phenomena.

In essence, the term *psycholect* refers to the use of language in some instrumental, strategic or tactful fashion. It is partially what Bolinger (1968:150-151) calls "self-conscious dialect." Bolinger provides an interesting psycholectal use of language among the Hanunóo of the Philippines. The Hanunóo have apparently developed a clever way of talking during courtship, akin to our "pig Latin", which is designed to keep messages from being understood by others, particularly rivals and older adults. It involves certain speech adjustments such as an extremely rapid rate of speaking, a falsetto voice, inhaling, and a rearrangement or partial substitution of sounds in a word.

Bolinger gives, additionally, several interesting examples of how some synonyms which express the same objective reality solicit an opposite attitude toward that same reality: *convert* vs. *apostate*, *virtuous* vs. *prissy*, *conciliation* vs. *appeasement*, *defense* vs. *militarization*, *smile* vs. *leer*, *bachelor girl* vs. *old maid*, etc. The knowledge of how to evoke the opposite attitude by a simple synonymic replacement clearly constitutes a psycholectal ability. Miller and Johnson-Laird (1976:625) similarly show how certain onomatopoetic substitutes for the verb *speak* can evoke or express various emotional responses:

<i>Verb</i>	<i>Emotion</i>
howl	anger, sadness
grunt, snort, hiss	disapproval
purr, coo	satisfaction
bleat, bray	nervousness
twitter	nervousness
chirp, cackle, chuckle, chortle	amusement
squawk, croak	dissatisfaction

This knowledge can be applied in various conversational settings in order to influence behavior by soliciting some intended reaction.

This same type of psycholectal ability can be seen as well in speech situations where one participant intends to dominate, or come out on top of, a verbal interaction. For example, if I wanted to win an argument on some, say, political issue, I would need to start

by capturing the attention of the other participants. I would need a verbal strategy that would indicate that my opinion merits more attention than the opinions of others. I could do this by replacing the more common "In my opinion" with something like "On the basis of several interrelated factors which have shaped my perceptions of this matter, I would like to suggest strongly that". As you well know, this type of ability also characterizes the normal way of talking in formal scholarly exchanges.

Another type of psycholectal ability manifests itself in the knowledge of how and when to use euphemisms. Euphemisms result, of course, from social pressures, but they also reflect a psychological suppression mechanism; namely the need to suppress the unpleasant feelings evoked by certain words. In fact, it is in the creation of euphemisms that *sociolect* intersects with *psycholect*.

Another manifestation of psycholectal ability can be observed in the tactful ways we use language to defend our personalities. As Di Pietro (1976:15) aptly puts it: "We develop distinct strategies of speech to assure that our personalities will emerge intact from any verbal encounter." He then goes on to give an example of how we can give criticism without leaving ourselves open to counterattack: "I hate to say this to you, but...", or "I hate being the one to tell you this, but...", or "I don't know how to tell you this, but...", etc. D'Amore (1975) has found the defensive use of language during psychotherapy in bilingual patients. It seems that among bilinguals code-switching constitutes an attempt to remain conflict-free. In fact, as Haley (1962) has demonstrated, psycholectal ability is essential to the proper handling of patients during psychotherapy. Among the various verbal ploys used by the psychotherapist, Haley singles out *Oh?* and *really*. *Oh?* is inflected in such a way so as to imply "How on earth could you have ever conceived such an idea?" This puts the patient in doubt not only about his own statement, but also about what the analyst means by *Oh?* and this, as Haley (1962:211) observes, forces the patient "to lean on the analyst to resolve the doubt." *Really* implies that the patient has motivations of which he is not aware. For example, the utterance "I wonder what that girl *really* means to you?" raises in the patient doubts as to what the girl does in fact mean to him. These verbal maneuvers are designed to raise doubt as an unconscious ploy. "This ploy is often considered the heart of the analysis since it is the most effective way of making the patient unsure of himself" (1962:212).

Often, the ability to use language psycholectally manifests itself as the knowledge of how to influence behavior or attitudes through a simple change in words. Di Pietro (1977) gives an interesting example of this by pointing out how the U. S. Department of War successfully removed the negative connotations associated with its name by becoming the Department of Defense. Similarly, as Boulton (1977) has pointed out, the language of terrorism is designed to affect behavior and attitudes: a *terrorist* to some is a *freedom-*

fighter to others.

Still another psycholectal use of language is for drawing attention to ourselves. In a fascinating article, Goffman (1978) has convincingly shown that interjections, exclamations, grunts, etc. all reflect a psychological need to draw attention to our feelings or attitudes. Expressions such as *Eek!*, *Yuch!*, etc. oblige one to concentrate momentarily on the speaker's thoughts and feelings. As Goffman (1978:814) puts it: "our blurtings make a claim of sorts upon the attention of everyone in the social situation."

Perhaps the most common type of psycholectal ability is the knowledge of how to use language in a suasive fashion. Makkai (1975) gives an interesting example of how to persuade a lady customer to buy an expensive pair of shoes:

Lady Customer: "How much are these shoes?"

Salesman: "These are the better ones, but you can't afford them."

Lady Customer: "That's the pair I'll take."

This type of psycholectal ability is used frequently by Charles Schulz's cartoon character Lucy in her desperate and fruitless attempts to court the musician Schroeder. Here is a typical example (Schulz 1957). Notice how Lucy equates "inspiration" tactfully with herself:

Lucy: "Most great composers were inspired by women.
Do I inspire you, Schroeder?"

Schroeder: "You'd inspire me a lot more if you'd go away!!!"

Lucy: "I'm afraid you're doomed to be a failure,
Schroeder, You can't be a great composer and
fight against inspiration."

Many more examples of how language is used for psychological reasons can be adduced here. I hope that the point I am trying to make is clear by now. There are certain lectal manifestations of language which imply a choice of structures and words on the basis of some psychological motivation (suasion, suppression, defense, etc.). As already mentioned, the term *psycholect* has been coined to refer to these manifestations in line with previous terminological practice. My intention is not to add yet another neologism to the vocabulary of linguistics. We certainly do not need one. With this term, it is my purpose to focus attention upon a lectal dimension of verbal behavior that has not been looked at in as great a detail as others. I hope that research on psycholects, together with that on other lects, will lead to a better understanding of how language form and

use are related.

REFERENCES

- Austin, J. L. 1962. *How to Do Things with Words*. Cambridge, Mass.: Harvard University Press.
- Bloch, B. 1948. A Set of Postulates for Phonemic Analysis. *Language* 24.1-46.
- Bloomfield, L. 1933. *Language*. New York: Holt, Rinehart and Winston.
- Bolinger, D. 1968. *Aspects of Language*. New York: Harcourt, Brace and World.
- Boulton, N. 1977. The Language of Terrorism. *Interfaces* 7.3-6.
- D'Amore, A. 1975. Language Code Switching in Bilingual Psychotherapy: A Preliminary Report. *Interfaces* 4.5-6.
- Di Pietro, R. J. 1976. *Language as Human Creation*. Washington, D. C.: Georgetown University Press.
- _____. 1977. Words and the Public Conscience. *Interfaces* 8.1-2.
- Dittmar, N. 1976. *Sociolinguistics*. London: Arnold.
- Garvin, P. 1964. The Standard Language Problem. In *Language and Culture in Society: A Reader in Linguistics and Anthropology*, ed. by D. Hymes, pp. 521-526. New York: Harper and Row.
- Goffman, E. 1978. Response Cries. *Language* 54.787-815.
- Haden Elgin, S. 1979. *What Is Linguistics?* Englewood Cliffs, N.J.: Prentice-Hall.
- Haley, J. 1962. The Art of Psychoanalysis. In *The Use and Misuse of Language*, ed. by S. I. Hayakawa, pp. 207-218. Greenwich, Conn.: Fawcett.
- Hall, R. A. 1951. Idiolect and Linguistic Super-Ego. *Studia Linguistica* 5.21-27.
- _____. 1980. Language, Dialect and "Regional Italian." *International Journal of the Sociology of Language* 25.95-106.
- Halliday, M. A. K. 1970. Language Structure and Language Function. In *New Horizons in Linguistics*, ed. by J. Lyons, pp. 140-165. London: Penguin.
- _____. 1973. *Explorations in the Functions of Language*.

London: Arnold.

Hockett, C. F. 1958. *A Course in Modern Linguistics*. New York: Macmillan.

Joos, M. 1967. *The Five Clocks*. New York: Harcourt, Brace and World.

Makkai, A. 1975. Psychoanalyzing Semantic Change: The Connection of Etymology with Transactional Analysis. *Interfaces* 3.4-5.

Miller, G. A. and Johnson-Laird, P. N. 1976. *Language and Perception*. Cambridge, Mass.: Belknap.

Schulz, C. M. 1957. *Good Ol' Charlie Brown*. New York: Holt, Rinehart and Winston.

LINGUISTICS AND NON-VOCAL COMMUNICATION

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1. The purpose of this paper is to generate interest among linguists in the unique language problems of the non-vocal physically-disabled person, and in what the language of this kind of person can tell us about normal language.

The term "non-vocal, physically-disabled person" is used to refer to an individual with a brain disorder which impairs the physical capability of speech as well as other motor functions. In most cases, a person who is disabled enough to be non-vocal is also unable to use sign language because of the hand control necessary to make signs.

Most non-vocal physically-disabled people suffer from cerebral palsy which is the result of damage to the central nervous system causing motor dysfunction.¹ It does not necessarily affect the cognitive ability of the individual. Not all cerebral palsy victims are non-vocal. The degree of disability can range from a little difficulty with fine motor control to total lack of control of all functions of the body. It is generally the more severely disabled individuals who cannot speak or use sign language.

2.1. The inability to speak presents a severe communication problem. For the non-vocal physically-disabled person, other factors compound the basic communication difficulty. The possibility that a communication problem may exist is not always acknowledged right away. Although signs of a severe physical disability usually appear within the first year of life, if not detected at birth, they are not always associated with a potential communication problem, in spite of the fact that certain behaviours can indicate a child who is at risk for communication difficulties in infancy. For example, swallowing air, problems with sucking, and drooling past a certain age are abnormal behaviours and may suggest that the child will have speech problems in the future.²

Once the child has been diagnosed as having cerebral palsy, physiotherapy begins almost immediately. Speech therapy is usually not undertaken until the child is two or two-and-a-half years old, because children generally cannot tolerate a standard therapy session until that age. Meanwhile, if he really does, in fact, have a speech problem as well as his physical problems, he has already missed an important period of time which a normal child spends exploring his environment, playing with sounds and

engaging in pre-linguistic communicative behaviours. On top of this initial delay, speech therapy may be attempted for several years in an effort to teach the child to communicate using speech, rather than resorting to an augmentative communication system for immediate use. This is not to suggest that traditional speech therapy is unsuccessful for all non-vocal children. Some are able to learn functional speech. But others are not, and for them, delays in trying an augmentative system hinder their communication abilities.

2.2 Besides the problems in going through normal pre-linguistic activities, the delay in starting remediation procedures and the attempts at traditional speech therapy, the way other people interact with the disabled non-vocal person also hinders the acquisition of normal communication skills. For example, when interacting with a normal child, a parent or caregiver tends to reinforce only appropriate responses from the child and in this way gives him guidelines about correct usage. With a child who has speech difficulties, any vocal response is reinforced, whether it is correct or not.³ By praising all vocalizations, the parent or caregiver feels that he may encourage the child to vocalize more. As a result it is harder for the child to learn appropriate communicative behaviours because he must rely entirely on observation of others, without having any direct experience of his own.

A non-vocal disabled person generally does not have as wide a range of social experiences as a normal person. This is partly due to the physical lack of access to many buildings and facilities for wheelchairs, and partly due to society's attitude towards the disabled. Many people have never had the opportunity to interact with a severely disabled person. They do not know how to communicate with them and so are uneasy and hesitant to try to have a conversation with someone who cannot speak. This reduces the chances which a non-vocal person has to learn social interaction skills. Others in turn may be put off by the inappropriate social behaviour, which only serves to isolate the non-vocal person even further.

Because most of the people who interact with a non-vocal person are close to him, usually either family members or caregivers, they tend to accept behaviours which would not be considered appropriate in other social settings. This happens for two reasons: any communicative behaviour from a non-vocal person is to be encouraged whether it is appropriate or not; and everyone is a little more relaxed with close friends and family. You do not have to be as polite to your best friend as you do with an acquaintance. This situation shows another way in which non-vocal people learn inappropriate communicative behaviour.

3. In addition, non-vocal people are disadvantaged in terms of education and general knowledge. As far as education is concerned, so much time is taken up in trying to communicate that other academic areas suffer. Non-vocal students are generally very hard to assess and evaluate simply because of the communication problems. Educational expectations for a non-vocal student are usually very low compared to his able-bodied peers, even for students who are felt to have normal or above-normal intelligence.

4.1. While no one would deny the expressive language problems of the non-vocal population, it seems that there has been a minimal amount of research concerning receptive capabilities. It would not be surprising to find a few gaps in the receptive language of someone who has gone through such a different language acquisition compared to a normal child.

The receptive language problems of non-vocal disabled people should give some idea of the relationship between linguistic and non-linguistic development: A theory of language acquisition must not be entirely dependent on normal prelinguistic communicative experiences and vocal play and experimentation.

4.2. One area of language where the non-vocal population almost without exception has difficulty is in learning to read and spell. While this is not really surprising, it is not immediately clear why this should be.

5. Trying to communicate with a non-vocal person who does not use an augmentative communication system is like playing "twenty questions," only more difficult. It is almost always possible to establish some kind of "yes/no" response, even if it is only raising the eyebrows. The non-vocal person answers "yes" or "no" to the receiver's questions. It is difficult for the non-vocal person to tell the receiver something he does not already know, because if the receiver is not aware of the new information, he will not think to ask about it.

6.1. Until recent years there were basically two kinds of augmentative communication systems available to the non-vocal individual: a spelling or word board which, if he cannot read, requires more than the non-vocal person is capable of; or a picture board which is not sophisticated enough to communicate any more than simple basic needs. In 1971 another system called Blissymbolics came into use at the Ontario Crippled Children's Centre. Some of the system's development and features will be described.

6.2. In the 1940's, Charles Bliss developed a system of symbols which he intended as a means of international communication.⁴ It is a visual graphic system of semantically-based symbols. Bliss' symbols did not attract much attention as a way of

eliminating the language barrier between countries but they were of interest to a group of teachers and therapists at the Ontario Crippled Children's Centre, who were trying to devise an alternate communication system for some of their non-vocal students.⁵ Since the communication problem affects so many areas of the student's life, especially his educational opportunities, an augmentative communication system was needed which would be simple and meaningful for these students who could not read traditional orthography, but at the same time be sophisticated enough to allow expression to a wide range of thoughts and emotions, and to allow the full potential of the individual to be realized.

Blissymbols are generally iconic. Some examples of Blissymbols are found below⁶:



The symbols for "house," "woman," and "vehicle" are fairly straightforward, but a symbol such as "teacher" must be put together from the meanings of the individual symbol parts (person, give, knowledge). Symbols having to do with feelings

all contain the  symbol, which means "feeling" and symbols about mental activities all contain the symbol for "to think,"

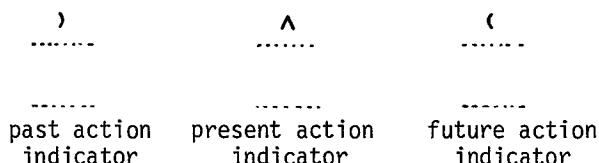
an outline of the top of the head.  For example, the (to) think

symbol for "kind"  is made up of the "feeling" symbol kind

plus the symbol for "help." The symbol for "suggestion"

 is made up of "opinion" and "purpose." suggestion

The system contains past, present and future tense markers. The present tense marker is found above the symbol. To make a future or a past tense, the user must point to the appropriate indicator before pointing to the symbol.



The symbols are usually displayed on a flat board placed on the user's wheelchair tray. The symbol user points to the symbol he wants, if he is physically capable of doing this. If not, a mechanical or electronic aid may be employed, or the receiver of the message scans the board for the symbol user.

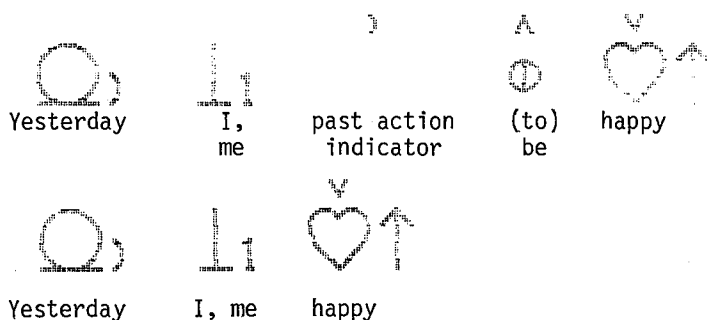
6.3. Blissymbols have been in use for ten years now. It is estimated that there are 30,000 non-vocal people who communicate through Blissymbols around the world.⁷ The Blissymbolics Communication Institute, which has received a licence from Charles Bliss to try to maintain a standard Blissymbol system, disseminates information and teaching materials to Blissymbol instructors through resource centres in 20 countries.

It is clear from the interest shown by parents and professionals who are involved with the non-vocal population that the system has been helpful for many non-vocal people. An evaluation study of the impact of the system carried out in 1974-1975 found many positive results.⁸ For example, many children who were thought to be retarded proved that they were not, once given the means of expressing themselves. Others showed improved motor control. Once it became meaningful to be able to point accurately rather than simply being an exercise, the symbol user made an effort to control his movements.

Improvements were also found in other areas of development, for example, less aggressive behaviour, less frustration, showing more initiative, having greater contact with other people. These were not so much a direct result of the use of Blissymbols themselves as a result of having a means of communication.

6.4. As far as grammar is concerned, Bliss indicated four main rules. First, the word order in a sentence is Subject, Verb, Object, although he did not express it in those terms. Second, to make a negative sentence, put the negative marker in front of the verb. Third, for a yes/no question, place a question marker at the beginning of the sentence and leave the rest of the word order unchanged. In a WH question, the question word is moved to the front of the sentence. Fourth, sentential adverbs and adverbial phrases are placed at the beginning of the sentence.

These rules provide limited guidance for someone who is trying to teach a student to use the Blissymbol system. What happened was that Blissymbol instructors used their own knowledge of language and the grammar rules of the language of the environment to guide them in teaching non-vocal people to use Blissymbols. A normative view of language is held by many people working in the field of language remediation and some instructors spend enormous amounts of time trying to get a symbol user to include many morphemes which make the sentence closer to English, but which are not necessary to understand the meaning. Many people feel that, if the symbol user learns to use English structures and to produce all morphemes corresponding to English morphemes, it will be easier for him to make the transition to English later when he is ready to move into reading and traditional orthography. This implies that it should be easier to get to the English sentence "Yesterday I was happy" from Yesterday I PAST be happy" than from "Yesterday I happy," which is not necessarily the case.



Requiring the symbol user to point to symbols for all the morphemes in the corresponding English sentence means that he must have more conscious knowledge of what is present in the sentence than many native speakers have, especially children. It is not surprising, therefore, that many symbol users do not do this unless prompted. In fact, what they do is often very different from what they are taught. For example, adjectives follow the noun sometimes. The plural marker appears before the noun sometimes. The object may be placed in front of the verb sometimes. The subject of the sentence may be missing altogether. Determiners and relative clause markers occur rarely, and possessive markers are frequently absent.

The grammar of Blissymbol use has never been examined in any systematic way. Mr. Bliss, of course, did a lot of thinking about individual symbols, and symbols which have been added to the system by the Blissymbolics Communication Institute were considered carefully. But they are still arbitrary choices made from outside the system rather than a natural development through use by native speakers. There does seem to be an

internal grammar of some kind to the Blissymbol system. Symbol users do not just use the symbols as substitutes for English morphemes.

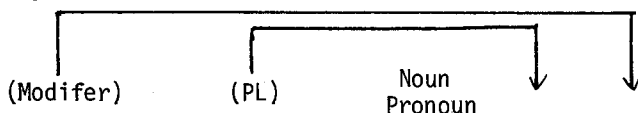
In a very preliminary investigation of Blissymbol utterances, I have found difficulties in deciding what constitutes a sentence and to which grammatical category a symbol belongs. The system contains category markers and strategies for changing categories, but these strategies are rarely used. If a symbol user needs a certain symbol to use as a noun, and it is only available on his board as an adjective he simply points to the adjective in the place of the noun. For example, if the symbol user wanted to talk about a "physical handicap," he would simply

point to the symbol for "physically handicapped" -



which is marked as an adjective.

A verb group and a nominal group can be isolated. The position of elements in the nominal group can be described in terms of proximity to the noun. The plural marker, adjectives, quantifiers, other nouns, and the possessive marker have all been found to occur either before or after the noun. So far in my investigation, a maximum of one modifier plus the plural marker has appeared in the nominal group. When they do occur together, they are both on the same side of the noun. As a first approximation, the structure of the nominal group can be described informally as follows:



The term "modifier" includes quantifiers, adjectives, other nouns, and the possessive marker. So far in the data, more than one modifier has not occurred so that no statement about the ordering among these elements can be made.

Three elements occur right next to the verb: modifiers, the negative, and tense markers. As with the nominal group, they appear on either side of the verb, except the negative which always precedes the verb. If more than one element occurs, one precedes the verb and one follows, although apart from the negative marker, it does not matter which precedes and which follows. Only two of the three elements can occur with the verb at one time. The structure of the verb group can be described

8. Silverman, H., McNaughton, S., and Kates, B. Handbook of Blissymbolics, Blissymbolics Communication Institute, 1978.

ITALIAN-ENGLISH BILINGUALISM IN AUSTRALIA: THE EFFECT ON NORMS

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1. Background. To many Americans and Europeans, Australia evokes the image of a monocultural and monolingual country modeled closely on England. Certainly, the kind of linguistics that has been done there reflects this image. The major topic of research on language has been conducted largely on the varieties of Australian English, with special regard to pronunciation. Mitchell 1957, Jones 1966 and Baker 1978 are representative of the many publications on this subject. The second most frequently pursued area of linguistic study has been the languages of aboriginal peoples. A number of such studies have been sponsored by the Australian Institute of Aboriginal Studies. This same institute also conducted a survey of aboriginal languages in 1967-68. In comparison to Australian English as a major topic of interest among Australian linguists and aboriginal languages as a secondary one, practically nothing has been done on the languages of various European ethnic groups which comprise a large percentage of the Australian population (cf. Kaplan 1980).

The significance of such groups in Australia is underscored when one realizes that in a total population of 14,000,000, upwards of 1,000,000 are of Italian extraction (Totaro 1980a). Other major ethnic groups in Australia include Poles, Germans, Dutch, Yugoslavs, and Greeks. According to Clyne (as cited in Totaro 1980a), 20.7% of the inhabitants of the city of Melbourne uses a language other than English for its community affairs. Measures of language retention yield differing results, depending on the group being investigated. On the whole, however, they are high--from 97% of the Greek constituency to 93.74% for the Italian and 54.45% for the Dutch (Totaro 1980a). In consideration of the largely anglocentric political profile Australia presents to the world, that country's multiethnicity remains a well-guarded secret.

Just below the most visible levels of politics, industry and education, there is evidence that the multiculturalism that marks daily life in Australia will soon shed its veils and become a significant factor in

shaping national affairs. One sign is the newly-formed (1979) Commission for Ethnic Affairs of New South Wales. This commission is charged with a number of duties relating to ethnic needs, such as welfare services for migrants, industrial relations, improved educational opportunities for non-English-speaking persons, and the enhancement of intergroup communication. Operating in five regional offices throughout New South Wales, the Commission employs interpreters and translators to help the newly arrived. A resource center is being established and grants have been provided for Saturday schools specializing in ethnic languages. In addition to the work of the Commission, Australians of various ethnic extractions have started to enter politics. One recently elected parliamentarian of Italian origins went so far as to request permission to make his introductory speech in Italian. This request was refused but the language issue will undoubtedly become more heated as more non-British Australians enter the political scene. An outstanding example of the new ethnic Australian politician is Ms. Franca Arena of Sydney. Ms. Arena combines ethnic issues with the concerns of working women and the correction of injustices against all women. An eloquent speaker and writer in both English and Italian, she has produced a well-received documentary for Australian television portraying the plight of Italian women in the work force.

The Italians of Australia have gone through phases of adjustment and acceptance not unlike those experienced by Italians in other Anglo-dominant countries. While some effort has been made to study the function of language in identifying Italian ethnicity in contact situations (see, for example, Di Pietro 1976), no one to this investigator's knowledge has studied how the interaction of Italians with the dominant group might affect the function of the dominant group's language. Australia presents an especially interesting situation in this regard. It is a relatively young country and its language use is in a state of flux. The country is also cut off from all of the nations that have supplied it with people. For this reason, the contributions of Italians to the many sectors of the Australian economy tend to be no less valued than those of the dominant group. Today, the term 'new Australian' is applied equally to all who arrive, regardless of provenance. While relatively few Italo-Australians have yet to acquire the label of 'old Australian', the dynamics of Australian society will most likely allow for a greater number of such transitions in the near future.

2. The Status of the Italian Language in Australia. As Totaro 1980a,b and Smolicz and Harris 1977 point out, ethnic languages in Australia are deprived of reinforcement through the school system. Italian occupies a double status. It is ethnic but it is also listed among the five modern foreign languages customarily taught in Australian schools (the other four are French, German, Japanese, and Indonesian). Despite its presence among 'school' languages, its main domains of usage remain those of the family and the neighborhood. Several newspapers, such as La Fiamma and Il Globo, are published in Italian and are widely read by Italo-Australians. There is also a recently established multicultural TV channel which provides programs in Italian over a national network. It is difficult to gauge how many Anglo-Australians make an effort to read the Italian-language newspapers or watch programs in Italian on TV, or try to communicate in other ways with Italian speakers. Judging from gestures and body-language which are used throughout the Australian population and which appear to derive from Italian usage, the amount of inter-group contact has been considerable for some time. A strong sign of the growing interest in expanding the formal study of Italian is the endowment of a chair in Italian at La Trobe University in Melbourne. Other tangible signs can be found in the work of Terry Quinn, Director of the Horwood Language Centre at the University of Melbourne. Quinn is developing a program of self-instructional tapes in Italian. He is also active in the plans to create a bilingual Italian-English curriculum for the elementary level of education.

Within the Italo-Australian family, the major use of Italian appears to be cross-generational, i.e., between parents and children, or among adults who are middle-aged or older. Children and young adults speaking to each other often switch to English. I hasten to add that this state of affairs is only an impression formed on the basis of several brief visits by the investigator to Italo-Australian homes. There are no statistics to support this impression. However extensive the cross-generational use of Italian may be, this use of the language is likely to have special significance for English as spoken in that country, as we shall see shortly in this paper. While a number of features mark English as distinctive in Australia, I shall focus only on the ones salient to the impact from Italian.

3. The Speech Continuum and the Correcting Protocol in Australian English. The most appropriate descriptive framework for Australian English is the

speech continuum. Within such a framework, we can accommodate the seemingly endless variations of speech one encounters throughout Australia. At each end of the continuum is located a variety of English which is more or less archetypical. At the basilectal end stands the so-called 'broad' Australian or 'Strine.' This variety is considered by the general population to be the most indigenous of all Australian types of English. Outstanding among its phonological features is the centering of diphthongs in words like apple, painted, tea, and light, all pronounced with a midcentral vowel followed by a fronting offglide (/ɪ/). The other end of the continuum, the acrolectal one, is occupied by a so-called 'standard' or 'correct' variety, the features of which are very similar to those of standard southern British English. The mesolects of the continuum are relatively unstable, with most English-speaking Australians fluctuating up and down according to setting, addressee, and topic. Broad Australian is the lect of friendship (or 'mateship' as the Australians call it), intimate conversation, and solidarity. It is also more likely to be used by males than by females. The standard correct Australian English is generally the language of education, public addresses, the media, and most major business affairs. The mining industry is a notable exception to the last-mentioned category. Mining engineers are apt to use the broad variety with business associates possibly to reinforce the 'rugged' male image associated with that line of work.

The English-speaking visitor to Australia is likely to be struck by the frequency with which many Australians 'adjust' their speech. Native Australians are especially aware of the lack of understanding English-speakers from other countries display when addressed in the broad variety. As a result, 'corrections' to a lect standing higher on the continuum are made even if the setting would not call for a shift. An instance of this 'correcting protocol' involved the author of this paper who was told at an informal gathering that it was getting /laɪt/. By the pronunciation used, I understood that it was getting 'light' which led me to comment that we were still at a considerable time span before dawn. When my Australian interlocutor realized that I had misunderstood, she repeated the key word, pronouncing it more like my own rendition of 'late'. This episode made me conscious of the frequency with which Australians correct their own speech, moving upwards along the continuum. A visit to a middle-class English-speaking family allowed me the opportunity to observe a mother correcting her children's speech at frequent intervals during my stay. Further observations

on other occasions led me to conclude that in English-speaking families, the correcting protocol is applied primarily by the mother and most often to male offspring.

While the use of the correcting protocol implies a general tendency to move away from basilectal broad Australian, there are indications that the broad variety is firmly entrenched and serves a social function of importance in Australian society. Its use admits the speaker to the most intimate, ethnically unmarked levels of interaction with English-speaking Australians.

4. Italo-Australians and the Correcting Protocol. Since, as was stated earlier, the major function of Italian is cross-generational within the family, the correcting protocol is effectively blocked among Italo-Australians. In other words, many Italo-Australian mothers address their children in Italian in precisely the situation where correcting takes place in monolingual English-speaking homes. The result is that many Italo-Australians, especially the males, develop an unchecked basilect of broad Australian and carry it with them into adulthood. Their use of the basilect is striking in conversations with bilingual Italian/English-speaking people from other countries. While their Italian is quite similar to that of Italian Americans or of Italo-Canadians, a switch to English in informal dialogs carries with it a strong reminder of the geographical and social distance between Italo-Australians and their counterparts in North America.

What of the future in Australian speech patterns? We can make several conjectures at this point. If the correcting protocol is equally absent among Australians of other non-English-speaking origins, its general social function may well be weakened with time. In this case, the schools would remain the only formal institutions through which correcting can be achieved. The school teachers' efforts would be unsupported in the home. At the same time, broad Australian is likely to expand in use, not only because it would be unchecked but also because it facilitates access to the network of communication with the establishment of 'old' Australians. The commencement of formal instruction in ethnic languages in the public schools would be another factor to consider, since it is likely to reinforce multilingualism at the expense of 'corrected' English. Whatever happens, the situation of language contact in Australia provides an excellent opportunity to observe how the restricted use of minority languages in contact with majority languages may affect the societal norms of the latter.

Acknowledgment

I am grateful to the ATESOL organization of New South Wales for inviting me to teach in their summer program for teachers of English-as-a-second-language, in January, 1981. I took advantage of this sojourn to collect the materials for the present paper. Of course, all responsibility for its accuracy is mine alone.

References

- Baker, Sidney J. 1978. The Australian language. Milson's Point, N.S.W.: Currawong Press.
- Di Pietro, Robert J. 1976. "Language as a marker of Italian ethnicity." Studi Emigrazione, vol. 42, pp. 202-218.
- Jones, A. 1966. "An outline phonology of Australian English." Occasional paper no. 8: Australian Language Research Centre, University of Sydney.
- Kaplan, Robert B. 1980. "The language situation in Australia." The Linguistic Reporter, vol. 22, no. 5 (February), pp. 2-3.
- Mitchell, A. G. 1957. The pronunciation of English in Australia. Sydney: Halsted Press.
- Smolicz, J. J. and R. McL. Harris. 1977. "Ethnic languages in Australia." International Journal of the Sociology of Language, 14, pp. 89-108.
- Totaro, Paolo. 1980a. "Maintenance and transmission of Italian culture in Australia: realities, myths, dilemmas." Address given at the May 20, 1980 meeting of the Dante Alighieri Society, Brisbane.
- Totaro, Paolo. 1980b. "Towards the development of an Italian cultural policy for Australia: proposals." Paper given at the first national conference on the Italo-Australians of the '80s. Melbourne, October 11, 1980.

LANGUAGE, LOGIC, AND LAUGHTER

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If we accept the standard notion that humor is based on incongruity, then any violation of a convention or other pattern is a possible source of humor. Language, as our primary means of communication, of course, is important to humor, because we use language to tell one another about real or fictional incongruous events. But language itself, with its many kinds of structure and patterning, is also a rich source of possible incongruities. This distinction between using language to communicate about incongruities and using language itself in incongruous ways, is captured nicely in the distinction sometimes made between a comedian (e.g. Red Skelton), who says funny things, and a comic (e.g. George Carlin), who says things funny.

Leaving aside the first use of language for humor--as the medium of communicating anecdotes and the like--I would like to focus on some of the humorous possibilities in language itself. I'll be looking at a broad range of patterns in language, including such areas as logic not ordinarily considered by linguists.

There are many levels at which incongruity can be found in language. The lowest level, from one point of view, is that of the sound patterns and written patterns of words, apart from any consideration of meaning. Deliberate or accidental mistakes in pronunciation or spelling, for instance, can be funny. Verbal slips, too, and spoonerisms are humorous in themselves, even when they don't result in new, unintended words. And incongruity need not be the lack of order where we expect order--the presence of order where we don't expect it, as in excessive alliteration or multiple rhymes in prose, can also be funny.

At the next higher level we have humor which involves the meanings of the words to some extent, but which still depends heavily on the phonological or typographical mechanics of language. Jokes which turn on the use of homonyms fall into this category, as do pronunciation and spelling errors which result in unintended words. Perhaps the most common form of this kind of humor is the simple pun in which a person uses a certain word in a conversation because it, or a homonym of it, has a meaning other than the straightforward meaning, which is also somehow connected to the topic at hand. If a group of people are discussing football, for

example, someone might say, usually with emphasis on the punning word, "Let's pass on to talk about something else." Because such puns involve little cleverness or insight, and because the punster often has to strain the conversation to make the pun, many people have a strong dislike for puns. Especially tiresome can be the punning contest, in which everyone gets in on the act by racking his or her brains for words related to the topic, or homonyms of such words, and then building essentially meaningless comments around them. In fairness, however, I should mention that some famous people have been very fond of puns: King James I required them of his courtiers. And puns need not be as simple as the one above, of course. There is even a pun which I like, perhaps because it is clever, and it is used to say something. It appeared as a very short dramatic review of a play called I Am a Camera, and read simply: "No Leica."

Somewhat cleverer than the simple pun is the double entendre. As in the simple pun, a word or phrase is used which has two meanings. But here, as is not the case with simple puns, both of the meanings fit into the sentence to make grammatical sense. The sense of 'pass' in which we pass a football cannot be given to the word in "Let's pass on to talk about something else." But in a double entendre there is true semantic ambiguity to the sentence as a whole. Consider the story about the English bishop who received the following communication from one of the vicars in his diocese: "My Lord, I regret to inform you of my wife's death. Can you possibly send me a substitute for the weekend." Not only are there two meanings possible for 'substitute', but here each gives us a way of interpreting the sentence.

As this example shows, too, the humorous double entendre plays on meanings which are not just different, but in some way opposed. Ambiguous sentences which simply have different meanings are not likely to be funny. When we hear the sentence "I saw the bank from the bridge," for example, we may be sensitive to the fact that, out of context, 'bank' here could refer to a river bank or to a financial institution; but this ambiguity is not very amusing.

Similar in effect to the double entendre are the mispronunciation, the spoonerism, the verbal slip, and the spelling or typographical error, which result in a second meaning for the sentence. Here again, it is opposed, and not merely different meanings, that we find most humorous. We find such errors funniest, perhaps, when we think of them as Freudian slips, as revelations of what the person really wanted to say, but felt constrained not to.

Like the verbal errors above, mistranslations can be humorous simply as errors, but are more humorous when they yield a new meaning that is opposed to the original. The Biblical phrase "The spirit is willing but the flesh is weak," for instance, was once translated into the Russian equivalent of "The liquor is good but the food is bad"; and a good deal of the humor here comes from the

contrast between the religious profundity of the original and the secular triviality of the "translation." The kinds of humor we have been considering so far have been based on incongruities in the simpler aspects of language, such as pronunciation, spelling, and the assignment of meanings to words. But as we move to higher forms of "saying things funny" we find incongruities not so much in the mechanics of language as in what is being said, the message that the language is being used to convey. While puns and lower forms of humor are basically playing with words, higher forms, or "wit" as it has usually been called, are basically playing with the ideas behind the words. William Hazlitt described wit as "an arbitrary juxtaposition of dissonant ideas, for some lively purpose of assimilation or contrast, generally of both." The witty comment will often consist of an amusing comparison of two things which normally would not be thought of as similar. When Aristophanes describes a certain statesman as having a voice like that of a pig on fire, for example, we experience a kind of pleasurable surprise at thinking of the man in these unfamiliar terms.

Wit belongs under the heading of humor in language, rather than under the other heading of humor in things, conveyed by language, because the incongruity in wit occurs in the language. The man Aristophanes is talking about may have had an incongruous voice--indeed his acquaintances may have considered it funny to listen to him. But before Aristophanes compared his voice to the squealing of a pig on fire, the incongruity of that juxtaposition of ideas did not exist. This incongruity was created in language.

Though wit is often based on similarities between things, it can take other forms. Sometimes, for instance, the witty comment achieves its effect by presenting a situation from an incongruous point of view. A character in a comedy of Labiche, for example, shouts up to his neighbor, who has dirtied his balcony, "What do you mean by emptying your pipe on my terrace?" To which the man responds, "What do you mean by putting your terrace under my pipe?" Most often, perhaps, the shift in perspective is not to such an absurd point of view, but only to one which we do not ordinarily adopt, as in Oscar Wilde's turnaround of an old saying: "Work is the curse of the drinking classes."

Another humorous device related to the shift in perspective is play with categories--describing something which is in one category as if it were in another. There is a scene in Woody Allen's movie Annie Hall in which Allen goes into a room to kill a spider and comes out with a very troubled look on his face. "You've got a spider in there the size of a Buick," he says, "definitely a major spider." What is funny here is not just the comparison of the spider to something very large--a car--but Allen's use of a specific brand name of car. "A spider the size of a car" wouldn't have been half as funny as the line used, because it would have involved mere exaggeration. But by using "the size of a Buick," Allen has shifted categories from talk of physical

objects of different sizes to talk of cars. For something to be "the size of a Buick" implies that it is a motor vehicle or something of the sort. But, of course, spiders aren't in this category. A similar category shift makes Allen's use of the phrase "major spider" funny too. In taxonomy spiders can be major by being of a certain size; but the pronunciation of the word "major" in the film indicates that Allen means more than that. He means that the spider is of great importance and urgency, as a major fire or earthquake would be. And ordinary spiders simply aren't in this category.

Another kind of order in language which makes possible humorous incongruities is logical order. What seems to work best is not a complete lack of logic, but a lack of logic in an otherwise plausible sounding piece of discourse. In Mark Twain's Innocents Abroad, for example, the author offers his homage at the Tomb of Adam: "The tomb of Adam! How touching it was here in a land of strangers, far from home . . . to discover the grave of a blood relation. . . I leaned upon a pillar and burst into tears. . . Noble old man--he did not live to see me." The incongruity here, of course, is in the illogic of Twain's reasoning; far from being a "blood relation," Adam is his most distant relative. But what makes Twain's tribute especially funny is its ring of plausibility. Indeed, in some pieces of humor based on logical incongruities, it may take some expertise to figure out just where the reasoning goes wrong. Almost everyone would agree that the following graffiti is invalid as a syllogism, but it may take a while to put one's finger on the mistake involved: "A stale pretzel is better than nothing. Nothing is better than God. So a stale pretzel is better than God." Some pieces of humor even work a logical incongruity into an interchange between two characters so that not only is the incongruity accepted as if it made sense, but the person responding to the incongruous line actually builds on the incongruity. In the Marx Brothers' Animal Crackers, for example, Chico says to Groucho, "He thinks I look alike." To which Groucho responds, "Well, if you do, it's a tough break for both of you."

An interesting genre of humor based on the violation of logical principles is the Irish bull. Sometimes these are close to things people actually say, and what is at fault is not the person's reasoning, so much as the way that reasoning has been expressed. The following is an example: Policeman: "Say you! If you're going to smoke here, you'll have to either put out your pipe, or go somewhere else." The mistake here is certainly no worse than that made by an Omaha woman who, when asked by an interviewer about her TV watching habits, said, "Oh, I never watch TV. I turn it off more than I turn it on." But often in Irish bulls it is not just the wording but the reasoning that is mistaken, as in: Irishman: "Begorra I wisht I knew the place where I am goin' to die, and sure and I'd niver go there!"

Another kind of humor is based, not on the outright violation

of logic, but on a spurious appeal to logical or quasi-logical principles. In one of Myron Cohen's best jokes, a man is in bed with his neighbor's wife in the afternoon, when suddenly they hear her husband coming through the front door. The man jumps out of bed and scrambles into the closet, where he buries himself under some clothes, shoes, and odds and ends. The suspicious husband bursts in through the bedroom door and shouts, "OK, where is he?" He looks under the bed, behind the draperies, in the bathroom, and then finally in the closet. When he at last pulls away the paraphernalia covering the man, he triumphantly asks, "And what are you doing here?" To which the man responds, "Everybody's got to be someplace."

Statements can be humorous, too, when their logical form is disguised, as when they sound like information but are actually just tautologies. Here are two examples: "Everything tastes more or less like chicken." "You can get anywhere in ten minutes if you go fast enough." Conversely, a statement can be amusing when it sounds tautologous, but is somehow illuminating nonetheless. The maxim "A rich man is just a poor man with money" is like that, as are many pieces of folk wisdom.

Paradoxes are often amusing in a similar way: at first they appear to be necessarily false, because self-contradictory; but then we see that the contradiction is only apparent and that the statement actually reveals something true. According to a story told about Picasso, an art dealer bought a canvas signed "Picasso" and travelled to Cannes to see if it was genuine. Picasso took one look and said, "It's a fake." A few months later the man bought another canvas signed "Picasso" and returned to Cannes. Again Picasso said "It's a fake." "But cher maitre," the man protested, "it so happens that I saw you with my own eyes working on this very painting several years ago." Picasso simply shrugged his shoulders and replied, "I often paint fakes."

The last kind of humorous incongruity in language I want to consider is pragmatic incongruity. Pragmatic incongruity may come into our language use, first of all, in the connection between an assertion and the situation it purports to refer to. When someone makes a statement that we know is a gross exaggeration or an outright lie, we may be amused by the "lack of fit" between the statement and the reality. Tall tales in fiction can be funny in a similar way. When we read about the amazing feats of someone like Paul Bunyan, we may laugh because we know that no human could perform such feats. Exaggeration of what is possible sometimes combines with logical incongruity here too, as in Carl Sandburg's yarn about the man who was so tall that he had to climb a ladder to shave himself.

A related kind of incongruity is between the semantic content of someone's utterance, and the tone, gestures, and facial expression with which s/he speaks it. We find it funny to listen to

someone read a serious speech, for instance, with an insufficiently serious tone or with an overly grave one. Sarcasm is often funny because it is clear from the way the person is saying what s/he is saying that s/he doesn't mean it. Sometimes, too, as in humorous understatement and overstatement, it can be obvious simply from the situation that the person is being ironic. On a Monday morning a condemned man was being led to the scaffold, the story goes, when he said, "What a lousy way to start the week!"

Written language, too, can be funny by having an incongruity between the message and the way it is expressed. Gag signs such as "THINK" and "ESCHEW OBFUSCATION" work by violating the very maxim they express. And signs such as "Want to learn to read? Call 458-5800" are funny because they could not serve as a message to their intended audience.

Another area of pragmatics that is a rich source of humor is presupposition. Linguists and philosophers have discussed presupposition a great deal in recent years, and have used the word in different ways; but for our purposes we can simply say that when an utterance U presupposes some proposition P, then P has to be true in order for U to be used successfully in the ordinary way. The command "Close the door," for example, presupposes such propositions as "There is a door to which I am referring" and "The door is open." Unless there is a door and it is open, "Close the door" cannot be used as a command--if these words are uttered, as Austin says, they will "misfire."

One way to get incongruity from an utterance that has presuppositions is simply to use it when we know that it will misfire, that is when we know that the presupposed propositions are false. A sophisticated joke of this type is Martin Mull's "Do you realize that man is the only animal which chews the ice in its drink?" For this utterance to serve as a real piece of information, there would have to be several species which had iced drinks. There aren't, of course, and so Mull's observation is just a delightful piece of silliness.

Another way to play with presupposition is to use an utterance, usually a question, which presupposes something that is in fact false, but not obviously so, and which is nonetheless embarrassing to the person to whom it is addressed. Asking someone, "Do you still pick your nose all the time?" presupposes that at least in the past the person did frequently pick his/her nose; by uttering this question we give the impression that it is common knowledge that s/he had, and still might have, this nasty habit. Lots of hostile and mock hostile humor works in this way, by putting the hostile content not in the utterance, but in what the utterance presupposes. Johnny Carson, on the Tonight Show, once said to Ed McMahon, after McMahon had corrected him on his pronunciation of some word, "Well, I'm sure that Dirward Kirby won't be like that when he's sitting here." If Carson had put the playfully

hostile content into what his utterance said, if his statement had been "I'm going to replace you with Dirward Kirby," then his utterance wouldn't have been very funny. But by making a statement which presupposed that McMahon was being replaced, Carson made it sound as though everyone could just assume that he was firing McMahon, which in this situation was quite funny.

The last kind of pragmatic incongruity I want to explore is that involving the violation of the general guidelines governing conversation. Much research has been done on the principles of conversation, but here I can discuss only a few of the most general principles. I'll consider those suggested by H.P. Grice (1975: 64-75). According to Grice, conversation is a rational procedure, basically an exchange of information and opinion, which is guided at the most general level by what he calls "the Cooperative Principle." Because of the cooperative nature of conversation, he says, participants in a conversation can be expected to follow such guidelines as the following:

1. Make your contribution as informative as is required for the current purposes of the exchange.
2. Do not make your contribution more informative than is required.
3. Do not say what you believe to be false.
4. Do not say that for which you lack adequate evidence.
5. Avoid obscurity of expression.
6. Avoid ambiguity.
7. Be brief.
8. Be orderly.

Let's look at these principles one at a time to see their humorous possibilities:

1. It is often funny when a person's contribution to a conversation is not informative enough. Someone's giving one-word answers to questions that clearly call for more, is a stock comedic device. So is the person's giving an evasive answer in order to keep something hidden. The latter device is often funniest when the person merely repeats the question a number of times--"Me, who me? What am I doing with your wallet?"

2. The person who gives too much information is likewise a stock comic character. To respond to a simple question like "How have you been?" with five minutes of tedious details on every aspect of one's daily life, is clearly not to cooperate with the other person, and in the right situation can be funny. Completely obvious information is also inappropriate in most conversations, and so pointing out what everyone already knows can be humorous. A sophisticated version of giving useless information is denying that some state of affairs obtains, when absolutely no one would have thought that it did obtain. One of Johnny Carson's routines, for example, involved his reading off a list of "little known facts," among them the following: "It is impossible to milk a bird," and

"There is no mention of anyone named 'Soupy' in the Old Testament."

3. Earlier we mentioned the humor possible in the gross exaggeration and the lie, as based on the incongruity between what is asserted and what we know to be the case. Here we might merely add that part of our amusement at the exaggeration or the lie can come from our realization that the other person is deliberately misusing what is supposed to be a medium of communication of information. Small children can be especially funny when we know they are lying.

4. The wild speculation or guess put into a conversation as a straightforward assertion, can be funny much as the exaggeration and the lie are. To assert something is to give others to believe that one knows what one is talking about. When it is discovered that one has merely been "talking through his hat," again there is the realization that language has been misused, and in the right circumstances this incongruity can be amusing.

5. Obscurity of expression hinders, or in some cases eliminates, communication. For someone to be sending a message in such a way that the person for whom it is intended cannot receive it, is incongruous, and so potentially humorous. Sometimes, too, as when we read or listen to bureaucratic gobbledegook, our amusement may be heightened by our feeling that the obscure language is a smoke-screen to hide the writer's or speaker's incompetence.

6. We discussed earlier some of the humorous possibilities of ambiguity. We might add here that our amusement at someone's use of ambiguous language can be heightened, as in the previous case, by the feeling that the person is deliberately trying not to communicate.

7. Longwindedness in one's contribution to a conversation works against the cooperative nature of conversation, and tends to turn a dialog into a speech (or if the others stop listening, into a monolog). As long as we are not trying to interrupt the windbag or conversation monopolizer, however, we may find this person funny, because his or her failure to treat the conversation as a cooperative enterprise makes his or her behavior incongruous.

8. All conversation is somewhat disorderly. One person will start talking before the other has stopped; a speaker will start a sentence and then in mid-sentence switch to a new one; the topic will sometimes change abruptly; etc. And within certain limits this disorder can be tolerated. But when the interruptions get too frequent, the false starts pile up within a single utterance, and the abrupt topic changes come too thick and fast, then the conversation gives way to confusion. When this happens, either in one participant's speech or in the conversation as a whole, it is common for people to feel the incongruity of what is happening and break into laughter.

In addition to these eight guidelines, there are of course other aesthetic, social, and moral principles guiding our talking to one another; and the violation of any of these principles will have humorous possibilities. But we need not go on. With conversational principles as with other kinds of order in language, wherever there is order there is room for incongruity.

We can leave off our listmaking here and close with a general comment on the sophistication of the many kinds of linguistic humor we have been considering. Any use of language, it is often said, is a complicated affair. And this is true enough. But playing with language by breaking its many kinds of rules for amusement is even more complicated. The person who can manipulate language for humorous effect not only is thoroughly familiar with the rules, but is self-aware of his or her language use at any moment, and knows from moment to moment how to break the rules in clever ways. If the ordinary speaker can be compared in skill to an airplane pilot, say, then the witty person is a stunt pilot.

REFERENCE

- Grice, H.P. 1975. Logic and Conversation. In Donald Davidson and Gilbert Harman, eds. The Logic of Grammar. Encino: Dickenson.

SILENCE IS DEADLY
The Second Foundation*
Michigan State University
and
Wayne State University

"Humankind does not put silence to the test;
silence puts Humankind to the test."
Max Picard, The World of Silence

0. Introduction

In discussing silence in Western Apache culture, Basso (1970) states that

...a knowledge of when not to speak may be as basic to the production of culturally acceptable behavior as a knowledge of what to say. It stands to reason, then, that an adequate ethnography of communication should not confine itself exclusively to the analysis of choice within verbal repertoires. It should also ...specify those conditions under which the members of the society regularly decide to refrain from speech altogether.

In this paper we would like to discuss certain aspects of silence in American society and how they might be treated within a relational network model of language.

1. A (Partial) Taxonomy of Silences

In order to discuss some of our beliefs with respect to the use of silence, we must first explain what we mean by highly-institutionalized social roles and less-institutionalized social roles. We find it useful to characterize the difference between these two types of roles in terms of the necessity for and/or the possibility of negotiating various rights and obligations sets among the participants.¹ To us, the degree of institutionalization of a social role is directly related to the degree to which behavior in a particular social setting is negotiable. The more highly institutionalized a social role, the less possibility to negotiate behavior associated with it.²

We have for this reason classified various types of silence along a continuum of institutionalization. In highly institutionalized settings, the structure of the interaction may prescribe that certain individuals refrain from speech at certain times; a random sample of people will generally react in the same way with regard to speech/silence patterns if placed into a social situation calling for institutionalized silence. Even an atheist is

quiet during a sermon!

With silence in less-institutionalized settings, individuals tend to be more unpredictable in how they pattern speech and silence. Certain individuals may have characteristic speech/silence styles, but these styles are idiosyncratic, and the individuals in question may vary in their use of silence according to mood and/or situation.

We believe that in terms of negotiating social roles and obligations sets, silence often constitutes a refusal to enter into negotiation or a withdrawal from negotiation. Since silence can imply the absence of negotiation, and since there is very little to negotiate in highly-institutionalized situations, it is not surprising that silence can be integrated into institutionalized behavior without disrupting its flow. Institutionalized silence can serve as a marker to proceed from one point in a social interaction to the next, and it may also signal that the transaction is flowing smoothly.

For example, when the chairman of the session at which we presented this paper introduced us, the silence after his remarks was one of our cues to begin talking. Note that the silence after his final utterance had to be distinctively longer than his pauses between utterances. Of course, things such as content, intonation, and tempo also helped us distinguish the final utterance from the non-final ones. In addition, we collaborated in the manufacture of that particular silence by waiting slightly, just to be sure that his final utterance was indeed final. In the highly-institutionalized setting of a conference session, it would not have been "appropriate" for us to have begun our speech until the chairman (and the audience) were silent.

Even as we spoke, the continued silence of the audience was an indication that the interaction was proceeding normally. At this point, it is important to remember that "silence" is relative to the context of interaction. Closely related to the notion of "silence" is that of "interruption," and what constitutes an interruption will vary according to a number of factors. We find it useful to describe interruptions in terms of four features: (1) volume, (2) duration, (3) controllability, and (4) need for response.

It is quite likely that some member of the audience said something to a neighbor, or mumbled to himself, or drummed his fingertips on his chair, or experienced a stomach growl during the course of our talk. All of these phenomena involve noise, but only under certain circumstances would they count as interruptions of the institutionalized silence then in effect.

A loud sneeze would be ignored, since it is low on the scales of controllability, duration, and need for response; if an individual were to experience a loud sneezing fit, however, thus combining volume and duration, the fact that one cannot usually control a sneeze would recede in importance. Under these circumstances, a person experiencing such a fit would probably control the interruption by leaving the room.

Similarly, had someone loudly proclaimed "Two plus two equals

four!" we probably would have ignored him and continued talking. Had someone loudly asked "How is silence handled in a relational network model of language?" however, we might have been compelled to stop our planned speech to answer, even if only to say that we would discuss that issue later. Such a question would have constituted a "real" interruption since it invoked a need to respond.

The silence observed by the addressee in a dyadic conversation is an example of less-institutionalized silence. In such situations, speech overlap between speaking turns is much more frequent than when highly-institutionalized silence is in effect. In addition, in less-institutionalized situations, a listener can punctuate the speaker's remarks with expressions of approval, wonder, disgust, and so on. As long as these expressions do not violate certain restrictions of volume, duration, controllability, and need for response, the speaker will not feel himself to have been interrupted. Indeed, such ancillary remarks on the part of the listener often serve as an encouragement to the speaker to continue talking.

This type of listener response can itself be institutionalized. For example, in describing the story-telling tradition of the Hopi, Malotki (1978) observes that

The audience is obliged to answer the narrator in unison. Every complete sentence by him is confirmed with a short expletive oh from the listeners. This tells the storyteller that he is still sustaining the interest of the group.

This provides additional evidence that the use of silence varies cross-culturally, and that to truly understand the nature and use of speech, we must examine the nature and use of silence, as Basso advocates. In terms of Gestalt psychology, we must understand the ground in order to understand the figure.

Before continuing, we would like to say that as far as we can tell, living human beings are never silent in an absolute sense. Only part of the communicating that humans engage in is manifested in speech, perhaps only a small part. The rest is transmitted through other means, among them muscle tension, skin temperature, eye movements, and breathing patterns. An astute observer can learn to recognize these signals and use this recognition for a variety of ends; although fascinating, this topic cannot be dealt with here.³ Suffice it to say that in the context of this paper, "silence" refers only to the lack of externalized verbal behavior.

Having presented this caveat, we would now like to mention some of the uses of silence which we have observed in American society.

2. Now You Say It, Now You Don't

In keeping with our interest in the use of language to control and maintain social relationships (The Second Foundation 1979, 1980, 1981), we have been examining the use of silence in

less-institutionalized situations. Specifically, we are interested in uncovering how silence can be used to establish--or attempt to establish--certain types of dominance relations.

"Dominance" and "power" are for us useful buzz words; as we have come to use them, they are related to the ability of one social unit, be it an individual or group of individuals, to successfully control the activities of another social unit. Who is actually in control of an interaction may have very little to do with who seems to be in control, especially when viewed from outside the system; in our opinion, this makes investigating social intercourse all the more interesting.

Part of the social function of speech is to enable participants in a conversation to negotiate certain roles and obligations sets. In less-institutionalized situations, silence can be used either to establish an authority relation ("dominance") or to indicate compliance with authority ("submission"). Note, however, that the use of silence to indicate compliance may in itself constitute a method of gaining one's personal ends; an individual can "trade" compliance (in the form of a silence which implies agreement or consent) in exchange for favors, privileges, and information from those in authority. Leaders can offer rewards for these social commodities, but followers may have no other resource but compliance.

Silence can express a power relationship because being silent is one way of refusing to negotiate. Refusing to negotiate can imply that one has no need to negotiate, which in turn implies that one is in an authority position vis-à-vis other participants in an interaction. This type of silence occurs very frequently in parent-child interactions, where parents may use it to discipline children, especially when some verbal exchange has already taken place. When a persistent child does not respond to verbal explanations of why a demand cannot be met, many parents simply lapse into silence, ignoring the child until it ceases making the demand in question. This type of interaction also takes place among adults, where it can be particularly effective or insulting, depending on whether one is the ignoring or the ignored.

An angry or emotionally hurt individual may choose to withhold speech as a way of punishing another individual. The notion of punishment again implies that the silent partner is in control of the interaction and hence has some measure of dominance over the other. This attitude is expressed quite nicely in the phrase "You can't make me talk!" It is interesting to note that the "punished" member of the dyad can counter this use of silence by continuing to talk, in effect saying "Now I am in authority, because I am going to make you listen to me." Thus the punishing silence can be reframed as the silence of compliance. In some cases, the silent partner realizes this and re-enters into negotiation.

Persons who habitually make use of the "punishing silence" are sometimes called "passive-aggressive." Such persons often use silence to provoke arguments by refusing to respond to questions or comments made "in good faith" by another person. Thus

A starts off by asking for information or making some innocent remark, but B ignores A and remains silent. A then makes a second remark, to which B again refuses to respond. This pattern repeats until A has become (justifiably) angry with B, and the fight is on. In this type of interaction, the "passive-aggressive" individual B is using silence as a type of weapon.

Silence can also be used to extricate oneself from unpleasant situations. In one instance, a man persisted in asking the female co-author questions which she found to be sexually insulting. She refused to make any response, thus cutting off the interaction. The purpose of her silence in this case was to indicate to the man that she thought his behavior inappropriate. In a sense, she felt "attacked" by this person, and she countered with a well-known defense: the cold shoulder.

3. Silence in Relational Network Models of Language

We would like to very briefly discuss some of the implications of silence for relational network models of language. Most, if not all, of the phenomena discussed above will be relegated to the performance aspect of such models.

It is fairly obvious to us that for many types of internal processing, silence is necessary or at least highly desirable. Witness the standard complaint "It's so noisy in here that I can't hear myself think!" Successful comprehension of an utterance may hinge upon the absence of both external and internal verbalization. We all know what happens when we are engaging in internal speech and someone suddenly asks us something about what he just said.

David C. Bennett and Jay Hammond have been working on a relational network model of performance which attempts to simulate human recognition of speech. As they put it (1981):

Using a stratificational model to model the decoding process entails sending signals into the network at the bottom of the realizational structure corresponding to specific components of phonetic representation. As the signals work their way upwards, larger and larger constituents are recognized. Such processing can be referred to as 'bottom-up' processing. As regards human listeners, there is a lot of evidence that the decoding of speech involves more than just bottom-up processing in this sense. There is, in addition, the active contribution of higher levels in the grammar, which we will refer to as 'top-down' processing.

They go on to cite experimental evidence for their position and to explain how their performance model incorporates both "bottom-up" and "top-down" processing.

We believe that humans are neurologically organized such

that they cannot successfully pay attention to both external verbal input and (conscious) internal verbalization; Bennett and Hammond's model gives implicit recognition to that position by incorporating top-down as well as bottom-up processing into the decoding of speech. If the listener were to begin to produce his own internal or external speech, the use of these two processing functions would be pre-empted by his own internally-generated signals. In simple terms, there would be no "room" in the linguistic network for processing more than one set of utterances successfully. One cannot both produce speech and understand speech at the same time.⁴

With regard to the social use of silence, it seems counter-intuitive to postulate "silence nodes" which somehow have an inhibitory effect on network activation and thus account for silence. We prefer to think of the relational network domain of performance as consisting of three separate but closely-related types of performance. The first of these is the object of most of the research into how competence networks are used to produce and comprehend speech. This type of performance can be called network performance, and is the focus not only of Bennett and Hammond's work, but also of such works as Dell and Reich (1980), Christie (1976), and Schreyer (1980).

A second type of performance might be called discourse or gnostological performance; it is primarily concerned with the rules governing how new relationships in the gnostology and/or semology are formed and related to lower levels of language, or--conversely--how input from lower levels of language serves as a command to construct new semological and/or gnostological structures. Examples of research into this type of performance are Copeland and Davis (1981), Davis and Copeland (1980), Makkai (1980), and Johannesson (1980).

Our own work revolves around a third type of performance, which we call social performance, since it relates the social environment of the individual to his use of the linguistic system. Rules of social performance control patterns of network performance; thus a social performance rule for members of the audience during a formal talk might be glossed "During the talk, do not activate the linguistic competence network such that it produces audible speech."

It seems to us that there is no intrinsic reason why a relational network model of performance cannot have these three divisions, or even more, if evidence warrants. Much more work needs to be done in investigating these areas and how they are related, and it is a goal to which we are committed.

4. Silence is Golden, Too

We would like to end this article with a thought about pleasant silence. There is a special sort of silence which can obtain between friends who have a long history of shared experiences. This silence is beyond negotiations, dominance and submission, punishment and reward. It is, rather a silence of

mutual admiration, respect, and joy.

NOTES

- * As usual, we would like to thank those participants in the Eighth LACUS Forum who offered their comments, criticisms, and encouragements. Further communications will be warmly received at either of the two addresses below:

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1. For an excellent introduction into the concepts behind roles and obligations sets and their relation to the social use of language, see Scotton (MS).
2. For further discussion of this notion, see Tryban and Nall (1979).
3. See, for example, Bandler and Grinder (1979).
4. Obviously, this is an oversimplified statement. One is, for example, able to understand one's own speech. With respect to dyadic communication, humans probably can decode and encode simultaneously under certain conditions and/or to limited degrees. Just what these "conditions" and "degrees" are is a matter for empirical research. We would be grateful to any readers who can provide us with information on this topic.

REFERENCES

- Bandler, Richard and John Grinder. 1979. *Frogs Into Princes: Neuro Linguistic Programming*. Moab, Utah: Real People Press.
- Basso, K. H. 1970. 'To Give Up on Words': Silence in Western Apache Culture. In: *Language and Social Context* (Pier Paolo Giglioli, ed.). 1972. Baltimore: Penguin Books.
- Bennett, David C. and Jay Hammond. 1981. Towards a Relational Network Model of Sentence Recognition. In: *The Seventh LACUS Forum 1980* (James E. Copeland and Philip W. Davis, eds.). Columbia, South Carolina: Hornbeam Press.
- Christie, William M. 1976. Evidence Concerning Limits on Central Embeddings in English. *Forum Linguisticum* 1:25-37.

- Copeland, James E. and Philip W. Davis. 1981. Identifiability and Focal Attention in an Integrated View of Discourse. In: The Seventh LACUS Forum 1980 (James E. Copeland and Philip W. Davis, eds.). Columbia, South Carolina: Hornbeam Press.
- Davis, Philip W. and James E. Copeland. 1980. Knowledge, Consciousness, and Language: Some Possible Sources of Discourse Phenomena. Rice University Studies, Vol. 66, No. 2 (Spring 1980). Papers in Cognitive-Stratificational Linguistics (James E. Copeland and Philip W. Davis, eds.).
- Dell, Gary S. and Peter A. Reich. 1980. Slips of the Tongue: The Facts and a Stratificational Model. Rice University Studies, Vol. 66, No. 2 (Spring 1980). Papers in Cognitive-Stratificational Linguistics (James E. Copeland and Philip W. Davis, eds.).
- Johannesson, Nils-Lennart. 1980. On Fictive Sentence Analysis. Rice University Studies, Vol. 66, No. 2 (Spring 1980). Papers in Cognitive-Stratificational Linguistics (James E. Copeland and Philip W. Davis, eds.).
- Makkai, Adam. 1980. Periods of Mystery: Or Syntax and the Semantic Pause. Rice University Studies, Vol. 66, No. 2 (Spring 1980). Papers in Cognitive-Stratificational Linguistics (James E. Copeland and Philip W. Davis, eds.).
- Malotki, Ekkehart. 1978. Hopitutuwutsi/Hopi Tales: A Bilingual Collection of Hopi Indian Stories. Flagstaff, Arizona: Museum of Northern Arizona Press.
- Schreyer, Rüdiger. 1980. Nodes and Nets: Explorations in Relational Network Notation. Rice University Studies, Vol. 66, No. 2 (Spring 1980). Papers in Cognitive-Stratificational Linguistics (James E. Copeland and Philip W. Davis, eds.).
- Scotton, Carol Myers. MS. Code Choice: The Negotiation of Identities in Conversation.
- The Second Foundation. 1979. Titles, Strategies, and Status: A Relational Perspective. In: The Fifth LACUS Forum 1978 (Wolfgang Wölck and Paul L. Garvin, eds.). Columbia, South Carolina: Hornbeam Press.
- . 1980. Status Discrimination by Third Person Pronoun Reference. In: The Sixth LACUS Forum 1979 (William C. McCormack and Herbert J. Izzo, eds.). Columbia, South Carolina: Hornbeam Press.
- . 1981. Frogs Into Princes: Conflict Between Organizational Structures as Revealed by Forms of Address. In: The Seventh LACUS Forum 1980 (James E. Copeland and Philip W.

Davis, eds.). Columbia, South Carolina: Hornbeam Press.

Tryban, Georgeanna and Elizabeth W. Nall. 1979. Roles of the Aging Woman in Urban Society. Presented at a meeting of the Michigan Sociological Association, Detroit, Michigan.

POLITENESS IN THE COURTROOM

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How the law works has been a subject of some interest throughout history. Yet only recently have social scientists approached the seemingly mysterious ways of lawyers. Now psychologists (Loftus, Sales), sociologists (Atkinson, Drew), anthropologists (Danet, O'Barr) and, of course, linguists (Charrow, Shuy) are beginning to look at how the business of the law is conducted in and out of court. Researchers have investigated the language of the law, primarily in its written form, and have outlined its features. David Mellinkoff, a lawyer, has described the language of law in terms of nine characteristics and four mannerisms:

Characteristics

1. Frequent use of common words with uncommon meanings
2. Frequent use of Old English and Middle English words
3. Frequent use of Latin words and phrases
4. Use of Old French and Anglo-Norman words
5. Use of terms of art
6. Use of argot
7. Frequent use of formal words
8. Deliberate use of words and expressions with flexible meanings
9. Attempts at extreme precision of expression

Mannerisms

1. Wordy
2. Unclear
3. Pompous
4. Dull

(Mellinkoff 1963: 11 & 24)

For the most part Mellinkoff's description concerns the lexicon of legal English, not its syntax. Studies carried out by linguists (Crystal and Davy 1969, Gustafsson 1975, Charrow and Charrow 1979, Sales et al 1977, Shuy 1978, Shuy and Larkin 1978) have shown the language of law to be characterized by

1. Nominalizations
2. Passives
3. Conditionals
4. Unusual anaphora
5. Whiz deletion
6. Odd prepositional phrase placement
7. Long and complex sentences

8. Unique determiners
9. Impersonality
10. Negatives
11. Parallel structures

(Danet 1980: 476 – 81)

Most of the work to date has focussed on the written language. The research on spoken language of law has been carried out primarily by anthropologists, ethnographers investigating legal processes. A Duke University team looked at variation in the English spoken in North Carolina courtrooms and its effect on the jury. (O'Barr 1981) They found variation in presentational style to be related to the credibility of both witnesses and lawyers. (Erickson, Lind, Johnson, O'Barr 1978) Other ethnographic research, especially work on dispute processing has provided a profitable framework for the study of courtroom interaction. (Danet 1980) We can look at the American legal system as a fact-oriented disputing process conducted through questioning.

Parties to a dispute present and press their claims in two principal ways. In the *narrative mode*, they simply tell their stories, performing speech acts of telling, asserting, and claiming. The second mode features *questioning*, and is obviously prominent in modern dispute processing, apparently because of the role of the third party. Whereas the modern inquisitorial model combines questioning by the judge with relative freedom for witnesses to tell their stories in open-ended narrative style, the adversary model requires tight control of questioning so that claims are generally expressed only as answers to very specific questions. Lawyers may attempt to persuade the jury or judge directly only in opening and closing statements. The dominant mode of persuasion in the adversary system is therefore highly indirect.

(Danet 1980: 514)

Since information gathering in our judicial systems is achieved through questions, it is important to look briefly at the form and function of questions. The function of the question in ordinary conversation can be to elicit information or to supply it (as in rhetorical questions). In addition questions can serve to show deference or to establish control. (Goody 1978: 26) Courtroom questioning is generally both for information and to establish control. It differs from ordinary conversation greatly because the information is not for the benefit of a questioner but for a third party -- the decision-maker or jury. A lawyer's Golden Rule of Cross Examination is "Do not ask a question that you do not know the answer to." (Bergman 1979: 185)

Conversational questions take several forms: overt questions, statements (I'd like to know _____), and commands (Tell me _____). Brenda Danet and her colleagues developed a typology of question forms based on the degree of coercion incorporated into the form.

Most Coercive

1. Declaratives (including tag questions)
because they tell more than they ask
2. Yes/No or choice questions
3. Open-ended wh-questions
4. Questions ("Can you tell us _____")
because they specifically ask about the witness's ability
or willingness and only indirectly request information

Least Coercive

(Danet 1980: 521)

A typology suggested by lawyers is similar:

1. Leading questions
The answer is incorporated in the question.
2. Closed questions
Questions ask pointedly for a particular fact leaving witnesses little room to use their own words.
3. Open questions
Questions impose little control except in narrowing the scope of the answer.
4. Narrative questions
Questions do little more than call witnesses' attention to the subject and ask them to talk.

(Bergman 1979: 81 - 106)

The difference in the two classifications is primarily that the lawyer version focuses more on the response while Danet's version is governed by the form of the question as posed by the lawyer. Where they stand in greatest agreement is on the coercive effect of leading questions (both declaratives and Yes/No of the Danet typology). As is suggested by the difference in the two typologies, form is not always an accurate indication of coerciveness or control. The degree of coerciveness is also affected by the social milieu. (Danet 1980: 522) Thus a declarative question about an insignificant fact may be less coercive than a question which is actually a challenge.

Given this open recognition and utilization of coercion, what is the role of politeness in court talk? Brown and Levinson (1978) have defined politeness in terms of face or one's public self-image and threats to it. Acts which may limit or impose on one's face call for politeness unless the speaker has determined that efficiency or some other factor is more important than face. In the courtroom witnesses are in the unfortunate position of forfeiting face when they take the stand. They have no choice. They must answer questions or stand in contempt of court and they have already sworn to be truthful. Thus when a lawyer questions a witness both parties know that their talk will be governed by concerns other than saving the witness's face. If this is so, why do we find examples of politeness in courtroom exchanges?

To answer that question I have examined tapes of two trials conducted by students enrolled in a trial advocacy course at the University of South

Carolina Law School. Both trials were of a civil proceeding: *Dixon v. Providential Life Insurance Company*. Materials for the trial were prepared by the National Institute for Trial Advocacy. (Broun and Seckinger 1977) NITA trials are conducted as realistically as possible. Real judges preside, and all participants maintain their roles throughout the trial. Although the trial is not an authentic one, every effort is made to provide law students with a realistic forum to try out their skills. The students have just completed a term of study on the techniques of trial practice: opening statement, presentation of a case, cross-examination of witnesses and closing argument. As they attempt to develop their personal style of presentation, they will naturally follow the practices of more experienced lawyers. What occurs on these tapes is, therefore, representative of actual trial practices in the state of South Carolina.

In *Dixon v. Providential Life* the issue is whether or not Judge John Dixon committed suicide or was killed accidentally. The suit has been brought by Mrs. Dixon because the insurance company has denied her claim for \$100,000 under its double indemnity provision for accidental death. Their claim is that Judge Dixon committed suicide and that they are only bound to pay her \$665, the amount of the premium paid by her husband when he took out the policy.

For the purposes of the investigation, I considered the use of "please" and "thank you," indirect requests, and other overt displays of deference to be indications of politeness. I also looked at address forms but did not consider the use of an address form itself a sign of politeness.

There are several examples of politeness, even exaggerated politeness, to be found in the rituals which govern much of the interaction in the courtroom, especially interaction between the judge and the lawyers. The judge is always addressed as "Your Honor." He is clearly designated as the authority figure as the requests directed to him demonstrate.

Lawyer: May it please Your Honor, plaintiff would call Sheriff Fred Webb to the stand, please.

Lawyer: I beg your indulgence, Your Honor. . . . I would ask that we take a brief recess at this time, if it's possible.

Lawyer: Your Honor, may I respond?

Because of his role almost all utterances directed to the judge contain examples of politeness. It is also true that almost all statements addressed to the jury as the ultimate decision-makers contain evidence of politeness:

Lawyer: Ladies and gentlemen of the jury, I'd like to introduce you first of all to the plaintiff in this action....

Lawyer: And so, ladies and gentlemen of the jury, we ask that you return the only verdict that justice can call for -- a verdict in favor of Providential Life Insurance Company. Thank you.

Judge: Ladies and gentlemen of the jury, I want to apologize for the delay....

Even the judge shows deference to the jury. The politeness here is almost ritualistic and entirely in keeping with the participants' roles in the trial.

Far more interesting and complex is the appearance of politeness forms when lawyers question witnesses. In South Carolina the direct testimony is framed by an opening and closing which almost invariably include some display of politeness.

Opening

Lawyer: What is your name please?

Lawyer: Please state your name and occupation.

Lawyer: Mrs. Dixon, could you please state your name for the record.

Closing

Lawyer: I have no further questions. Could you answer any questions the defense counsel may have?

Lawyer: Please answer any questions of the plaintiff's counsel.

The recipient of this elaborate closing ritual is not solely the witness; opposing counsel too receives permission for the cross examination from these requests as is clear in the example below:

Lawyer: Thank you, Mrs. Dixon. I have no further questions, Your Honor. Uh happy to have the defense counsel cross examine her.

These examples are from lawyers speaking to their own witnesses on direct examination. However, the phenomenon of a polite closing extends to the end of cross examination as well.

Lawyer: Thank you, Mrs. Dixon. I have no further questions.

The jury's role as observer and decision-maker is important here. Lawyers are eager to demonstrate the credibility of their witnesses. They do not want to give the jury the impression that if witnesses were allowed to open their mouths they would destroy the whole case. (Bergman

1979: 84) The display of willingness for the witness to be cross-examined helps establish that credibility. The "thank you" after cross examination may be a gesture of politeness, but it may also be interpreted as a sign that the witness was helpful to the opposition. The real audience for such information is the jury, not the witness.

The purpose of direct examination is for the witnesses to present their version of the story. Lawyers usually try to ask very open questions which give the witnesses the chance to use their own words as much as possible. In addition the lawyer and the witness are on the same side. Consequently, direct examination questions are more likely to be wh-questions or requestions.

Lawyer: Could you please describe the kind of person
Judge Dixon was?

Lawyer: Could you please explain to us the circumstances
which took you into the office?

Lawyer: And what did you do next?

On cross examination the lawyer's purpose is different:

Although it is in most cases civilized, cross examination is nonetheless a direct confrontation between attorney and witness. The witness has said something that hurts your client, and you want him to say something that will help your client.

(Bergman 1979: 149)

Experienced lawyers recommend leading questions because they focus on precise points and make it difficult for the witness to hedge. Several studies have in fact shown that more coercive questions dominate cross examination.

87% in Boston criminal trials

70% in Israeli criminal trials

89% in trial of Filipino-American nurses

(Danet 1980: 521)

Because of this difference between direct and cross examination, I have designated remaining examples either DE (direct examination) or CE (cross examination).

What is the distribution of politeness in direct and cross examination? In these trials, 89 of 600 DE questions include some features of politeness, and 16 of 258 CE questions are characterized by politeness. However, the content and function of these 16 CE questions is revealing:

CE Lawyer: Mrs. Crowe, you testified that when the phone
conversation ended that day, it ended abruptly,
is that right?

Witness: Yes.

CE Lawyer: Can you tell the jury what you mean by that?

The form of this question is polite and apparently innocuous. However, the lawyer goes on to imply that the witness has perjured herself and in the closing argument accuses her of having swindled the judge as well. This is not an isolated instance either. Of the 16 polite questions asked on cross examination, 15 of them lead to serious challenges of the witnesses. The only exception involves the plaintiff herself:

CE Lawyer: Now, Mrs. Dixon, I just want to take you back to the morning of your husband's death, if I may.

Politeness on cross examination is usually a precursor of challenge or conflict.

What of politeness on direct examination? I had anticipated that the use of politeness might vary according to the lawyers' perception of the witnesses' status or importance to the case. However, no such pattern is evident. Overall, instances of politeness are infrequent and fairly evenly distributed. There is no apparent relationship between the importance of the witness and the form of the questions. The only exception here involves the use of "sir" with Dr. Sharpe, the coroner, who was recognized as an expert witness. One lawyer includes the address form "sir" on 11 of 49 questions. Sharpe is the only witness for whom he uses "sir" although Sharpe is not the only male witness he examines. It is not an uncommon practice among lawyers to emphasize the credentials of their experts by using their titles, but this lawyer chooses a subtler approach.

The other pattern of polite questions to be found in the data is connected to the fact that leading or coercive questions elicit very narrow responses. In ordinary conversation such questions can often be indirect requests for extended information. 36 DE questions occur as follow-up questions after leading or closed questions. 26 of these follow-up questions include indications of politeness. Lawyers are advised to instruct their witnesses to answer questions exactly as they are asked without volunteering additional information. Nevertheless, some witnesses respond to the indirect request latent in the question.

DE Lawyer: Did you see your husband on November 10, 1980?

Witness: Yes, we had dinner together.

Other witnesses respond to each question separately:

DE Lawyer: All right. Did you have an opportunity to observe his demeanor...?

Witness: Yes

DE Lawyer: Could you please tell us what it was?

* * * * *

DE Lawyer: When was the last time that you saw Judge Dixon alive?

Witness: The day before his death.

DE Lawyer: Could you please explain the circumstances to the jury?

In his response to the lawyer's next question, the same witness does not wait for the follow-up question but launches into a description of the judge's demeanor. The result of this pattern of questioning can be confusion on the part of the witness. Is the narrow question to be interpreted as a request for elaboration or not?

The final pattern of use for politeness which emerges from these trials is one which I did not expect. It is not related to the witnesses at all. Instead, it seems to serve a discourse function of helping to signal organization within the testimony. The techniques of questioning recommended to lawyers have two goals: to make testimony clear and to make it memorable.

... If the factfinder cannot understand the testimony in the first place, and cannot remember it in the second place, then it is unlikely to be persuaded by it in the third place. ...

How do people learn? ... Only about 5 - 10% of human learning results from hearing. ... Oral testimony is simply not the most efficient method of communication.... You must use every effort to maximize the learning that can result from spoken testimony. (Bergman 1979: 44 - 5)

One effort, largely unconscious I suspect, made by some of these lawyers is to frame the significant chunks of testimony with particular types of questions, often using inclusion of direct address as a cue.

DE Lawyer: Mrs. Dixon, let's go now to a later time. What did you do after the funeral?

* * * * *

DE Lawyer: Mrs. Dixon, let me ask you some questions about your husband. What was his occupation?

* * * * *

DE Lawyer: Mrs. Dixon, what are the assets and liabilities of Judge Dixon?

The major portions of Mrs. Dixon's testimony -- the day of his death, the discovery of the insurance policy and subsequent negotiations, Judge Dixon's character and personality and her current financial state -- are each set off from the other by the use of her name and a shift in the form of the question. Other questions are simple Yes/No or wh-word questions without the use of her name. The same phenomenon occurs in the testimony of six of the fourteen witnesses.

In summary, this examination of politeness in the courtroom has reaffirmed the vast difference between direct and cross examination. In cross examination a lawyer can use politeness to mislead and confuse a witness while he gives the superficial appearance of being solicitous. During direct examination the use of politeness can give structure and organization to testimony which may help the jury to process it and remember it. It can also add to the confusion of DE witnesses who must try to determine when an indirect request for information such as "Did you see your husband?" should elicit a yes or no response and when the more extended narrative is appropriate. Thus politeness, like so much that goes on in the courtroom gives the uninitiated conflicting signals as to its role, contributing to the mystery that surrounds our legal system.

REFERENCES

- Atkinson, J. Maxwell and Paul Drew. 1979. *Order in Court: The Organization of Verbal Interaction in Judicial Settings*. Atlantic Highlands, NJ: Academic Press.
- Bergman, Paul. 1979. *Trial Advocacy in a Nutshell*. St. Paul: West Publishing Co.
- Brown, Penelope and Stephen Levinson. 1978. Universals in language usage: politeness phenomena. In: *Questions and Politeness: Strategies for Social Interaction*. Edited by Esther Goody. London: Cambridge University Press.
- Broun, Kenneth S. and James K. Seckinger. 1977. *Cases in Trial Advocacy*. National Institute for Trial Advocacy.
- Charrow, Veda R. and Robert P. Charrow. 1979. Characteristics of the language of jury instructions. In: *Language in Public Life*. Edited by James Alatis and Richard Tucker. Washington, DC: Georgetown University Press.
- Crystal, David and Derek Davy. 1969. *Investigating English Style*. London: Longmans.
- Danet, Brenda. 1980. Language in the legal process. *Law and Society Review* 14.445-564.
- Erickson, Bonnie, E. Allan Lind, Bruce C. Johnson, and William M. O'Barr. 1978. Speech style and impression formation in a court setting: The effects of "powerful" and "powerless" speech. *Journal of Experimental Social Psychology* 14.266-79.

- Goody, Esther N. 1978. Towards a theory of questions. In: *Questions and Politeness: Strategies in Social Interaction*. Edited by Esther Goody. London: Cambridge University Press.
- Gustafsson, Marita. 1975. Some syntactic properties of English law language. Turku, Finland: University of Turku, English Department.
- Keeton, Robert. 1979. *Basic Expressions for Trial Lawyers*. Boston: Little, Brown.
- Loftus, Elizabeth F. 1979. *Eyewitness Testimony*. Cambridge: Harvard University Press.
- Mellinkoff, David. 1963. *The Language of the Law*. Boston: Little, Brown.
- O'Barr, William M. 1981. The language of the law. In: *Language in America*. Edited by Charles Ferguson and Shirley Brice Heath. London: Cambridge University Press.
- Sales, Bruce D., A. Elwork, and J. Alfini. 1977. Improving comprehension for jury instructions. In: *Perspectives in Law and Psychology: The Criminal Justice System*. Edited by Bruce Sales. New York: Plenum.
- Shuy, Roger. 1978. The consumer and insurance policy language. Paper presented at Conference on Consumers and Life Insurance, Washington, DC, May.
- Shuy, Roger and Donald Larkin. 1978. Linguistic considerations in the simplification/clarification of insurance policy language. Washington, DC: Georgetown University and Center for Applied Linguistics.

I am grateful to the Research and Productive Scholarship Committee and the English Department (George L. Geckle, chairman) of the University of South Carolina for financial support; to the University of South Carolina Law School Clinical Program for its cooperation; and to Naomi Mimms and Brent Taylor for their assistance.

ON NONSTANDARD SUBJECT-VERB AGREEMENT IN PORTUGUESE

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1. Introduction

Two sets of criteria are usually employed by linguists in the analysis of the process of language standardization; namely, linguistic properties which deal with the intrinsic characteristics of the language (cf. Garvin, 1959) and psycho-social properties which deal with the behavior and attitudinal component of the phenomenon.

Stewart (1972:534) defined standardization as "the codification and acceptance within a community of users of a formal set of norms defining 'correct usage'". The awareness of the "correct usage" was labeled "the function of frame of reference" by Garvin (1959).

On the grounds of this twofold character of a standard language - codification and acceptance of correctness - a theoretical approach to standardization will necessarily include the dichotomy: real (or explicit) pattern vs. ideal (or implicit) pattern (cf. Castilho, 1978). Fishman (1972) distinguishes the actual verbal interaction within particular networks in a speech community and the referentially acquired variety which serves the purpose of symbolic integration within a reference network that may not exist in a physical sense.

Labov emphasized the latter, i.e., the attitudinal component of the standardization process, using it as a criterion for defining a speech community:

A speech community cannot be conceived as a group of speakers who all use the same forms, it is best defined as a group who share the same norms in regard to language. (Labov, 1972a:158)

In a later work, Sankoff and Labov (1979) confirmed the relevance of norms of referential interpretation and social evaluation to the concept, but have conceded that every speaker is a member of many and intersecting speech communities.

In a social setting where literacy is universal, the referentially acquired verbal variety may reach a high degree of uniformity in contrast with the variation in the actual performance of the speakers. The isomorphism of referential and social evaluations, which has been found in American communities when non-standard features of English were compared for several social groups (cf. Labov, 1966; Shuy, Baratz and Wolfram, 1968), seems to be rooted in a prestige-based ideology and is implemented by the action of "corrective" agencies such as the schools and the

media. Labov (1966:448) has claimed that:

When a New Yorker uses a high degree of a stigmatized form, it is not because he does not recognize the same norms as the other members of society; we have found that he is usually even more aware of the social significance of this variable than others.

This situation does not necessarily hold for Brazilian society which is severely beset by a high degree of illiteracy. The population of Brazil is basically a monolingual Portuguese speaking community with a very diversified repertoire range due to deep social cleavages which restrain a large part of the population from access to the oral and written standard. The speakers of rural or urban lower class dialects, most of them illiterate, have limited access both to the actual standard and to the referentially acquired norms of prestige.

In the present series of experiments, the first one was designed to find out whether a stigmatized feature of Brazilian Portuguese, namely, the lack of the third person plural verbal inflection, was consistently perceived by two groups of young adults who occupy opposite extremes in the social spectrum. In the second experiment, the perceptual correlates of the internal constraints in the subject-verb (s/v) agreement variable rule were examined.

In formal standard Brazilian Portuguese, s/v concord is a categorical rule, but nonstandard varieties have undergone reduction processes as a result of a pidgin language, which probably developed in this country in the 16th and 17th centuries. Such reduction operates mostly within redundant morphosyntactic patterns of opposition: nouns lose the marker of number, which remains in the determiners only, and verbs reduce their personal inflectional suffixes. This latter leveling is remedied by the obligatory use of personal pronouns.

Most of the simplification of the inflectional system of the language, however, seems to be related to acoustic-articulatory constraints. The leveling of verbal suffixes, for example, is related to the tendency of denasalization of final unstressed syllables, which is also a highly productive rule in dialectal European Portuguese. Thus the influence of the pidgin language is better conceived as operating a "trigger effect" (cf. Weinreich, 1964) upon the language drift. Many nonstandard features of Brazilian Portuguese do not occur only in the realm of popular dialects. They are also noticeable in colloquial forms of the standard language. In other words, they characterize a gradient stratification and not a sharp one (cf. Wolfram & Fasold, 1974).

2. First Experiment

The present series of experiments represents an attempt to discover whether or not nonstandard s/v concord is generally perceived. The first experiment dealt with Labov's (1964) claim

that the students' capacity to hear the difference between two forms in a consistent way is related to its social significance. The experiment sought to answer the following questions:

- a. Do speakers of Brazilian Portuguese distinguish between the variety of the language in which s/v agreement is a variable rule and the variety in which such a rule is categorical?
- b. If they do, does this distinction vary according to the individual's social class?

The methodology was basically a variation of the questionnaire technique, in which the "stimuli" were presented orally. It differed from the "matched-guise" in two aspects: all the speech samples were recorded by the same person; the "judges" evaluated language directly, in a seven-point scale that ranged from "absolutely correct" to "absolutely incorrect".

Two recordings were prepared. Each lasted four minutes and consisted of nine sentences. The sentences did not form a sequence but had factual content. In the first text, there were no grammar mistakes. In the second, there were nine occurrences of nonstandard s/v agreement with third person plural subjects.

The "judges" were 24 college students (11 males and 13 females), freshmen at the University of Brasília, and 24 sixth grade adult students at a night school. The average age of the first group was 20 years and 6 months, and of the second was 25 years and 7 months. The selection of the subjects was a random sampling. They were divided into four groups: college students who evaluated the standard sentences, night school students who evaluated the standard sentences, college students who evaluated the nonstandard sentences and night school students who evaluated the nonstandard sentences.

The data were analysed by a 2x2 analysis of variance. The standard sample ($\bar{X}=2.9$) was considered more correct than the nonstandard sample ($\bar{X}=4.05$; $F=12.993$; 1, 44 df; $p < .01$). A main effect of social class was also found. The college students presented an average of ratings ($\bar{X}=4.3$) higher than that of the night school students ($\bar{X}=2.7$; $F=26.53$; 1, 44 df; $p < .01$). This means that the distinction between the two samples is significantly more perceived among the speakers who attend college than among the adult speakers who are attending the sixth grade of elementary school. An effect of interaction between the variables was found ($F=21.48$; 1, 44 df; $p < .01$) since perception of nonstandard s/v agreement occurred in the college group but not in the night school group.

The experiment demonstrated that the stigmatization of the feature is well established among those speakers who have access to a college education, but this norm of behavior is not shared by lower class night school students even when they live in an urban area. Among them, the frequency of occurrence of nonstandard s/v concord is much higher than among the educated classes. Thus, the low class students lack the capacity to perceive the social significance of dialectal differences, which Labov claims is a

prerequisite to the acquisition of consistent prestige styles.

3. Second Experiment

Since 1976, A. Naro and M. Lemle have been investigating s/v concord in Brazilian Portuguese at the Federal University of Rio de Janeiro, using the variable rule paradigm. They have put forward the theory that lack of agreement occurs more frequently with those verb forms in which it matters least, in the sense that the leveling of the suffixes is hardly noticeable. Furthermore, it is more probable with the subject post-posed to the verb. Two structural factor groups, corresponding to these two types of constraints, were postulated: morphological class of the verb, which comprised six levels, according to the phonic salience of the singular-plural opposition, and a syntactic variable including three positions of the subject in the surface structure.

Variable rules are rules of production and therefore inadequate for the assessment of referential or evaluative norms. The attitudinal correlates of the internal constraints in a variable rule are to be established by means of subjective reaction studies (cf. Sankoff & Labov, 1979: 202/3).

Our second experiment was designed to examine the perceptual correlates of the morphological and syntactic constraints in the s/v concord variable rule as they were postulated by Naro and Lemle (1976). It followed a 3x6 factorial design. Two sets of variables, that had proved to be relevant for the production of the rule were established:

Surface Positions

- P-A Subject in pre-verbal position
- P-B Subject in post-verbal position
- P-C Subject deleted or distant

Morphological Classes

M-1 "fala/falam" 'speaks/speak'; stem stress, nasalization of the final unstressed vowel.

M-2 "faz/fazem" 'does/do'; stem stress and addition of a final nasal diphthong.

M-3 "falou/falaram" 'spoke/spoke'; ending stress, completely distinct desinence, past tense of regular verbs.

M-4 "fez/fizeram" 'did/did'; similar to class M-3; past tense of irregular verbs.

M-5 "dā/dão" 'gives/give'; monosyllabic forms with regular opposition as in class M-1.

M-6 "ē/são" 'is/are'; monosyllabic and completely distinct forms.

The objective of this experiment was to answer the following

questions:

a. Do the speakers of Standard Brazilian Portuguese stigmatize nonstandard s/v concord according to the phonic salience between third person plural and third person singular?

b. Is such a feature perceived more when the subject is deleted or distant than when it is present and near the verb?

c. Is such a feature perceived more when the subject is in pre-verbal position than when it is in post-verbal position?

The method was similar to that of the first experiment. A series of eighteen recordings was prepared, each containing nine sentences. Six sentences, grammatically correct, were repeated in all recordings; the remainder presented three occurrences of nonstandard s/v agreement.

The judges were 360 freshmen from the University of Brasília, with the average age of 21 years and 4 months, randomly divided into 18 groups of 20 people. Each group listened to and evaluated a different recording, using the scale that ranged from absolutely correct (1) to absolutely incorrect (7).

A 3x6 analysis of variance was performed and a main effect of morphological class was found ($F=3.94$; 5, 342 df; $p<.01$). The average of the ratings given to treatments M-1, M-2, M-3, M-4, M-5 and M-6 were respectively 3.75; 3.93; 4.28; 4.38; 4.46 and 4.70. "T" tests of differences between uncorrelated means were applied in each pair of these means. The results indicated that the mean of treatment M-1 is significantly lower than the means of treatments M-3 ($\alpha.05$), M-5 ($\alpha.01$) and M-6 ($\alpha.01$). The mean of treatment M-2 is significantly lower than the means of treatments M-5 ($\alpha.05$) and M-6 ($\alpha.01$).

A main effect of surface position of the subject was also found ($F=6.398$; 2, 343 df; $p<.01$). The average of ratings was ascribed as follows: treatment P-B (post-verbal subject): 3.93; treatment P-A (pre-verbal subject): 4.56; treatment P-C (distant or deleted subject): 4.25 ($F=6.398$; 2, 343 df; $p<.01$). The "T" test showed that the difference between P-A and P-B is significant ($\alpha.01$). Furthermore, there was significant interaction between morphological class and position of subjects ($F=2.668$; 10, 343 df; $p<.01$).

The results lead to the conclusion that stigmatization of nonstandard s/v agreement varies according to its probability of occurrence. In those environments where the feature is very frequent it was minimally perceived. The hypothesis that agreement is less probable in those forms where its absence is least salient, was indirectly confirmed.

4. Observations and Conclusions

The present series of experiments has pointed to at least two main facts:

a. The perception and evaluation of nonstandard features of Portuguese are not uniform throughout the Brazilian society.

People with a low level of schooling have not yet developed an awareness of the stigmatized character of features of vernacular Portuguese. They are probably conscious of more conspicuous dialect differences, but phonological variables which intersect with grammar and show a gradient stratification, such as s/v concord, are unlikely to be salient to them.

b. The perception of the absence of concord seems to be directly linked to the preceptive influence of schools, the spread of mass media, and the upper classes' prestige. A speaker of socially disadvantaged dialects will probably need a long period of schooling in order to acquire such patterns of behavior. Then, when he finally adopts them, he will, frequently, still use non-standard concord, because he internalized the rule at a later stage in his life.

As for a speaker from educated classes, in his social environment and at home, he begins to assimilate the publicly accepted set of evaluative norms much earlier. However, he will also use nonstandard s/v agreement and fail to perceive it, especially in those contexts where the feature is not conspicuous: with post-posed subjects and with verb forms in which the opposition singular-plural is hardly noticeable.

The facts sketched above seem to indicate that the course of evolution of the s/v concord variable rule is at different stages for the two social groups that have been studied. Among the speakers of vernacular Portuguese, the variable is at an initial stage of its course, considering that it is below the level of social awareness. The rule is further evolved among the speakers of Standard Portuguese. For them, s/v concord is a "marker" of stylistic variation, the most salient occurrences of the variable being subject to extreme stigmatization.

Such a description of the evolutionary trend of the variable is not supported by Naro's (1981) claim that the s/v agreement rule is undergoing a process of elimination from the grammar of Brazilian Portuguese. The analysis of the speech of two age groups of illiterate people living in Rio de Janeiro (Lemle and Naro, 1977), compared with the study of final syllable denasalization in the same sample (Votre, 1979), has shown that the use of s/v agreement by the younger informants is less often than by the older ones. This phenomenon in apparent time appears to be an indication of a slow process of rule death in real time.

This interpretation can be challenged though. The differences in the application of the rule between the two groups may not be an evidence of a trend towards elimination of verbal concord in Brazilian Portuguese. Very often, young speakers of non-standard varieties in urban settings show a higher concentration of vernacular features in their speech than adults (cf. Labov, 1966/1972b/; Wolfram, 1969; Milroy, 1980). The youngsters tend to interact in closed and dense networks which favor the maintenance of nonstandard features. Moreover, they have less contact with standard speech than do their elders.

The importance placed on the "saliency" principle in the

theory of the evolutionary course of s/v agreement is indeed soundly based:

In the case of loss of verbal concord, the linguistic actuating force was a low-level phonetic rule of denasalization of final vowels . . . For speakers having this rule, the singular/plural opposition (of morphological class 1) collapses on the surface in a certain part of the language. The diffusion of the nonagreeing system throughout the language then proceeds in accord with the principle of saliency along several distinct dimensions, extending itself most strongly in those contexts where it involves the smallest change in surface form. (Naro, 1981:47)

But the theory does not seem to account for the "trigger effect" of pidginization upon the language drift in Brazil.

The loss of verbal suffixes of number may not have been gradual, but very abrupt during the period of pidginization. If this hypothesis is right, then we would not be witnessing a process of elimination of the concord rule from the grammar, but, on the contrary, a gradual process of regaining of verbal suffixes. Such a recovery process would probably be following the scale of "saliency" postulated by Naro and Lemle, i.e., regions of greater surface differentiation would be more likely to reacquire the inflection than those that are hardly conspicuous.

A note of caution is in order here. The gradual recovery of the inflections does not imply an ultimate merging of popular varieties of Brazilian Portuguese with the standard. The preservation of social varieties is explained by the very social nature of language. Our point is that, with the recuperation of the suffixes, verbal concord will become a marker of stylistic shift for the whole speech community.

This hypothesis is in accord with the results of our experiments reported above. Yet much more investigation on the nature and the evolutionary trend of Brazilian Portuguese is called for.

References

- Castilho, Ataliba de T. 1978. "Variação lingüística, norma culta e ensino da língua materna". Subsídios à Proposta Curricular de Língua Portuguesa para o 2º grau, Vol. IV. São Paulo, Secretaria de Educação, Coordenadoria de Estado e Normas Pedagógicas, 32-42.
- Fishman, Joshua A. 1972. The Sociology of Language. Rowley, Newbury House.
- Garvin, Paul L. 1959. "The standard language problem - concepts and methods". Anthropological Linguistics I (ii), 28-31.
- Labov, William. 1964. "Strages in the aquisition of Standard English". In: Social Dialects and Language Learning, Shuy,

- Roger W. (ed.). Champaign, IL, National Council of Teachers of English.
- _____. 1966. The Social Stratification of English in New York City. Washington, DC, Center for Applied Linguistics.
- _____. 1972a. Sociolinguistic Patterns. Philadelphia, University of Pennsylvania Press.
- _____. 1972b. Language in the Inner City: Studies in the Black English Vernacular. Philadelphia, University of Pennsylvania Press.
- Lemle, Miriam and Naro, Anthony J. 1977. Competências Básicas do Português. Rio de Janeiro, Fundação Movimento Brasileiro de Alfabetização.
- Milroy, Leslie. 1980. Language and Social Networks. Oxford, Basil Blackwell.
- Naro, Anthony J. and Lemle, Miriam. 1976. "Syntactic diffusion". Papers from the Parasession on Diachronic Syntax, Steever, S.B., Walker, C. and Mufwene, S.S. (eds.), 221-239.
- Naro, Anthony J. 1981. "The social and structural dimensions of a syntactic change". Language 57 (1), 63-98.
- Sankoff, David and Labov, William. 1979. "On the uses of variable rules". Language in Society 8 (2), 189-222.
- Shuy, Roger W., Baratz, Joan C. and Walfram, Walt. 1969. Sociolinguistic Factors in Speech Identification. NIMH Final Report, Project N0 MH 15 048-01.
- Stewart, William A. 1972. "A sociolinguistic typology for describing national multilingualism". In: Readings in the Sociology of Language, Fishman, Joshua A. (ed.), The Hague, Mouton, 531-545.
- Votre, Sebastião J. 1979. "Phonological and syntactic aspects of denasalization in spoken Brazilian Portuguese". (Paper presented at NWAWE-8, Université du Québec à Montréal).
- Weinreich, Uriel. 1964. Languages in Contact. The Hague, Mouton.
- Wolfram, Walt. 1969. A Sociolinguistic Description of Detroit Negro Speech. Washington, D.C. Center for Applied Linguistics.
- _____. and Fasold, Ralph W. 1974. The Study of Social Dialects in American English. Englewood Cliffs, Prentice-Hall.

MARTHA, MOTHER OF A LANGUAGE --- A CASE REPORT ON THE
GESTURAL CREATION OF A DEAF AMERINDIAN IN NORTHERN CANADA

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I. Martha's personal data & methodology of the research.

The present paper is a report on the creation of a sign language (henceforth abbreviated as SL) by a deaf Amerindian woman. This research program began in 1977.¹ After 4 years' effort, travelling from Vancouver to Halifax, I finally had the chance last summer of meeting Mrs. Martha P., the creator of the most elaborate gestural system yet documented by a deaf individual without help or influence from any existent gestural, oral or written language.

Martha, a Cree woman, was born deaf in 1926 in the St. Maurice region of the Province of Quebec. She was illiterate, never went to a school for the deaf and lived as the only deaf person in her reservation.² Apart from her deafness she did not suffer any other infirmities. She became an orphan when she was around 10 and brought up by her aunt who apparently made no direct contribution to Martha's SL.³ Martha married twice and had 6 children of her own, 4 daughters and 2 sons, ranging in age from 14 to 28. They all learnt the SL from their mother as their first language. Martha's case is exceptional. For example, I gathered almost 800 established signs from her whereas in similar cases, only about 200 are expected.⁴ By 'established signs' I mean those lexical items marked by three characteristics: i. being in general of one single gestural component; ii. often having undergone some morphological modifications such as shown in signs like TOILET PAPER: hand by the side of the hip, palm backward, down pointing, hand pivoting becoming palm upward, pointing sideways; DEAD: hands pointing upward, palms facing each other about 2 inches apart (or joined at the heels of the palms forming a V-shape), raise hands to the head level, hands becoming separated further apart - the sign is derived from incorporating the sign of praying and the gesture indicating going to heaven; iii. being used by Martha and her habitual interlocutors in their conversations, and being morphologically much less variable than their corresponding lexical items in pantomimic forms which she might use with a stranger (see also next section).

The experience of my previous field trips led me to alter my investigative procedure. I noticed that in the gathering of lexical data created by a deaf person, we should, if circumstances allow, first interview those who are fluent in his SL and then verify the data thus gathered with the creator. Investigation

in this order has the advantage of measuring more accurately the lexical repertory of the deaf informant. In fact, a deaf informant is potentially capable of signifying any object by means of impromptu pantomimes, but such a presentation does not mean that he has an existent sign for naming it. In this case it is difficult to determine the limits of his existent vocabulary because by presenting objects to him to describe we are testing his descriptive capacity rather than his existent vocabulary. On the contrary, the signs furnished by his habitual interlocutors are signs of real usage and not improvised to meet the immediate demand of the occasion. As for the syntactic aspect of Martha's SL I followed the same procedure, from the "users" to the "creator". However I was conscious of the fact that the oral languages which my hearing informants speak (Cree and French) might affect their performance, and therefore I considered the data obtained from Martha as conclusive.

II. The lexical creation.

Gestural lexicons begin with the deixis which belongs to the pre-pantomime stage. This stage is characterized by its being object-independent. The pointing gesture is only a means to draw other's attention to an object but the gesture itself does not contain any element describing the object. The pantomime stage follows. I here classify the pantomimes into two types: those describing a situation (see the next section) and those which I call lexical pantomimes. Any researcher working on SL will observe that a deaf signer mimes an object if he does not have an existent sign for it. Martha was no exception to this rule. On several occasions she was confronted with some familiar objects for which she had no existent signs to represent them, e.g., a bottle of soya sauce, a "clinitest" (for testing the rate of sugar in the blood), a letter or cigarette tubes. In all these cases, for representing them, she would mime the physical appearance of these objects, how they were used, and what they were made of, etc. Moreover, many of Martha's signs still bear traces of their pantomimic origin, e.g. CONTRACEPTIVE (PILL + EAT + PREGNANT + FINISH),⁵ ICE-CUBES (gesture of tracing a rectangular shape with the index finger in the air + WATER + COLD + hand, front-pointing, palm upward, representing an ice-cube container, push hand forward horizontally).⁶ These signs were probably created recently and had not gone through a reduction process to become bi-gestural or mono-gestural established signs.⁷

The pantomime form of an established sign might surface again if Martha felt that it could facilitate her communication with a stranger. When I interviewed her for the first time she did not know that I had been intensively studying her SL with her children. She often replaced an established sign with its corresponding lexical pantomime, e.g., HARE (NOOSE + hand, relaxed, pointing forward, palm facing downward, imitating forward jumping movements 2 or 3 times + KILL + EAT/EDIBLE); PINE BRANCH MATTRESS (PINE + fist with palm side downward, thumb

extended and pointing at about 45° downward towards oneself, push the hand in that direction 2 or 3 times, i.e., imitating action of sticking pine branches on the ground + hands, front-pointing, palm downward, separating hands horizontally sideways, indicating the flat surface of a bed + SLEEP);⁸ BIRCH BARK (TREE TRUNK + hand, pointing up, palm sideward, making chopping movements while lowering the hand slightly after each stroke.)

To further support my argument I would like to quote an experiment conducted at the Salk Institute. The aim of that experiment was to examine the iconicity of signs but its result indirectly confirms the process of lexical creation observed in Martha's SL. According to the report, several deaf Americans were requested to sign the story of James Thurber's "The unicorn in the garden". None of these deaf candidates had a ready sign for the word "straightjacket" which occurs many times in the text. When they came across the word "straightjacket" for the first time, they all performed pantomimes to represent it: miming the act of putting on a straightjacket. Towards the end of the story, after repeating the pantomime several times, its form was reduced to one or two components, namely folding the sleeves of a straightjacket and the tightening of the belt. (Klima & Bellugi, 1979). This experiment illustrates the passage from an elaborate lexical pantomime to a much reduced sign which might be further evolved into an established sign if circumstances were favorable. The process of eliminating certain components in a lexical pantomime is comparable to the launching of a satellite. At the initial stage rockets are needed but they will be dropped once they have fulfilled their task of guaranteeing the satellite's entry into the orbit.

It has to be remembered that my interest in this study is not to trace the original form of a lexical pantomime which precedes the formation of its subsequent established sign, but rather, first, to demonstrate that an established sign has to go through the pantomime stage;⁹ and second, that one of the components in a lexical pantomime will be selected to become the established sign, e.g., in the lexical pantomimes cited above, the component NOOSE stands for HARE, the pushing of the fist with the thumb extended for PINE BRANCH MATTRESS, and the chopping movements for BIRCH BARK.¹⁰

III. Social-cultural & idiosyncratic factors in lexical creation.

Socio-cultural and idiosyncratic factors prevail in the lexical creation of Martha's SL. The tradition of sleeping on a pine branch mattress, the use of a noose to snare hares and the way to peel off birch bark for craft making surely have motivated the creation of their corresponding signs and at the same time moulded them. Take for instance the birch bark and the wild goose. Among my deaf Amerindian informants who have created a SL by themselves, Martha is the only person who had a sign for birch bark. The reason is that birch trees yielding bark of good

quality are abundant in the region where she lived. But in northern Manitoba and Ontario where I located my other informants, the climate is too cold for this species to provide any usable bark for making canoes or baskets. Consequently the sign for birch bark is absent from their vocabulary. The case of wild goose is just the opposite. Wild geese do not fly through the St. Maurice region and Martha did not invent a sign for them as my other informants in Northern Manitoba and Ontario had.

Perhaps I need to specify my notion of socio-cultural factors. In the broadest sense we might find many signs in various SL sharing the influence of the same socio-cultural factors, e.g., if we compare Martha's TRAIN, CAR or TV with the same items in other conventional SL. In order to put into relief the socio-cultural particularities which Martha's signs might reflect, I therefore adopt a restricted notion of the socio-cultural factors namely: a. local, e.g., PINE BRANCH MATTRESS, and not universal or quasi-universal; b. material and not psycho-cultural, e.g., the Chinese use the palm side of the hand to verify whether it is raining or not whereas the French use the back of the hand. My knowledge of Amerindian culture is not yet sufficient to deal with this second aspect.

Idiosyncratic factors too play a role in lexical creation. These factors manifest themselves in two ways. First, I observed that necessity did not explain the existence of certain signs in Martha's vocabulary, and I am convinced that her personal interest was decisive. For example, she had a sign for ROULETTE (game of) and SATELLITE. Apparently she did not need these two signs for her daily communication. In fact these two signs are among the few lexical items which members of her family did not know, and at the same time they are not in the form of improvised pantomimes. Their creation must have been inspired by what she had seen on the TV. (She had been exposed to TV culture since 1975). Secondly, the choice of a feature to represent an object or a person, e.g., a noose for a hare or a sign suggesting "bony" as the name for her son, was her personal preference completely.

IV. The beginning of syntax in Martha's SL.

The second type of pantomime is that describing a situation. The lexical pantomime discussed in the previous section and the one mentioned here are distinguished not by their forms but by their functions. The former normally goes through a reducing process to attain an established sign, the latter will not be subject to this process, but the pattern with which it is organized will be identified as part of the syntax of the SL. In the case of lexical items, once signs have come into existence and become established we can label the list as a lexicon, likewise, when the syntax of an SL is identified, we can consider a pantomime describing a situation as a gestural sequence equivalent to a sentence in oral language.

Here are some of the situations which Martha was requested to describe:-

i. a picture showing a car being raised up by a helicopter, Martha signed: CAR + HELICOPTER + gesture of raising something with both hands;

ii. in my film, I found the following spontaneous sequence: gesture of opening up a wallet with both hands + MONEY + gesture of putting money in (she was signing someone putting money into a wallet);

iii. in answer to my question who was in the picture, she signed: MAN + MINE (i.e., my man or my husband);

iv. in answering my question of what she thought of the woman in the picture I presented to her, she signed: WOMAN + BEAUTIFUL;

v. a picture showing a lot of cars, she signed: CAR + MANY/MUCH.

In the domain of lexical creation, the morphology of an individual sign and the content of a lexicon vary from one creator to another. In the case of syntax, on the contrary, there is a striking degree of uniformity, e.g., in the basic order in a gestural sequence, the position of a locative, an adjective, a genitive, a quantifier, etc. I consider that the orders of signs in sequences from i. to v. are subject to some cognito-perceptive constraints and the ordering of signs in these sequences follows the spatio-temporal development of the visual events which these sequences describe. The fact that the sign N (agent) and N' (patient), e.g., HELICOPTER, CAR in i. have to be temporally performed before the sign R (the relator, e.g., the action of raising something in i.) is evidence showing the existence of such constraints in a natural SL. In example i., HELICOPTER and CAR have to appear first in order to lend points of support to the R to establish the relationship between the two nominal entities. The same argument applies to the order of appearance of the locative in ii., the genitive in iv., and the quantifier in v. (cf. Yau, 1977). Take the locative in v. for instance. If the action of putting, the R, appears temporally before the locative WALLET, then we would no longer see the logic of the action: putting money into a wallet before opening it! These cognito-perceptive constraints are also present in the lexicalization of compound signs such as DIVORCE (WEDDING RING + BREAK), PASSENGER TRAIN (TRAIN + BOARDING VEHICLE), DREAM (SLEEP + THINK). It would be abnormal in a natural SL to see the order of the components in these compounds reversed, if so, these compound signs might be understood in a queer way. Thus I contend that the syntactic basis of a natural SL is created under the influence, or can even be said to be guided by cognito-perceptive constraints. Moreover, since the creation of the lexicon and the syntax occur at the same time as the pantomimes are performed, we have to conclude that the two creations are simultaneous. In fact in a case such as Martha's SL, it is difficult to imagine how the lexicon and the syntax were created

one after the other.

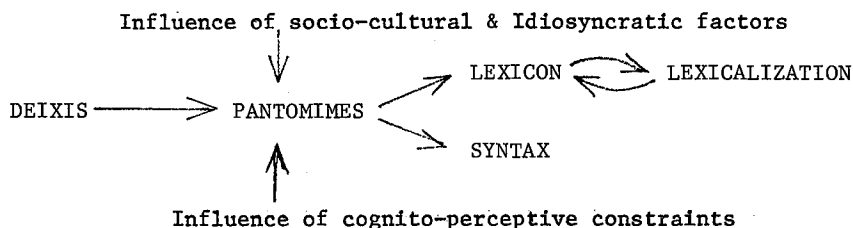
There are still other types of situations which I requested Martha to describe in gestures:-

a. those that contain more than one locative within a single sequence. For example, when I presented her with the following toy-filled scene:- one house on each side, and three cars between, she signed: HOUSE (on one side)+ HOUSE (on the other)+ CAR (in the space between the two houses posed previously)+ THREE. Based on this kind of example I argue that in a gestural sequence containing more than one locative (HOUSE and CAR are considered here as locatives because the location of one depends on that of the other), their positional ordering will be subject to the cognito-perceptive constraints. The order of appearance of the two locatives will be determined by the degree of their relative immobility. The immobile, HOUSE, will temporally precede the mobile, CAR (or less immobile, e.g., in the case of a house and a tree).¹¹ A similar rule can be observed in oral languages, e.g., in English, one is more likely to say "the cup is on the table" than "the table is under the cup" without imposing on the speaker any priority in the order of his descriptions of those objects in juxtaposition.

b. those situations involving a comparison.

When I requested Martha to describe two small film containers the same in size, form and color, differing in weight only, she signed by: pointing at the container A + HEAVY + pointing at the container B + LIGHT.¹²

Here Martha was adopting the same comparative schema as my other deaf Amerindian informants or deaf-mutes using different conventional SL but not yet having acquired the comparative marker "than". Among none of these cases, as a rule, are there relative markers standing for "than", "who", "because", etc., that synthetically link two or more clauses. Their means of expressing a comparison is by juxtaposition, a kind of syntactic strategy similar to the principle governing cartoon drawing. Why does a primitive (but not savage) SL opt for this solution? I have no answer to this question yet. Still it is obvious that there is a relation between the lack of these relative markers and the particular modality of this visual language. For now I can best recapitulate by giving a diagram outlining the fundamental procedures of Martha's creation.



FOOTNOTES

1. This research program was sponsored by the French Centre National de la Recherche Scientifique from 1978 to 1980, and sponsored jointly by this organization and the Council of Research on Human Sciences of Canada in 1981.
 2. There was another deaf Amerindian living in the same reservation. But he only became deaf at the age of 40, and there was no personal contact between the two persons.
 3. I interviewed Martha's aunt who was now 92 years old. She knew only some of Martha's signs, and as far as gestures are concerned, she could only express herself in kinds of exaggerated pantomimes which often involved movements of the whole body and were highly object-dependent. Nevertheless there is evidence that her pantomimes were related to some elements in Martha's lexical pantomimes (cf. section II).
 4. For example, Kuschel (1974) gathered 217 signs from his deaf Polynesian informant.
 5. The descriptions of the signs written in capital letters, unless provided immediately in the text, are listed in the appendix, and the " + " should be read as "followed by".
 6. COLD was her abbreviation for "refrigerator" in this case.
 7. The components of a lexical pantomime are entities having iconic references of their own. Since in most cases, one of the components in a lexical pantomime will be chosen as the established sign, the dominant mono-gesture characteristic of the established signs is already fixed.
- Among Martha's data there are also established signs of 2 components such as DREAM (SLEEP + THINK), PASSENGER TRAIN (TRAIN + BOARDING VEHICLE). I am not yet sure whether these bi-gestural signs were derived directly from a single lexical pantomime or whether they were the outcome of a lexicalization process, i.e., the 2 components of a bi-gestural sign were derived separately from their own lexical pantomimes. Given that the components such as SLEEP, THINK, TRAIN, BOARDING VEHICLE have a very free usage in Martha's SL, and that the lexicalization process is one of the principal means of lexical expansion in SL, I am therefore rather inclined to consider that the majority of these cases are the results of lexicalization. This reasoning entails another postulate on my part: that there is a recycling of established signs into the mechanism of the system for further new lexical creations.
8. The Amerindians in the St. Maurice region still keep the tradition of sleeping on a mattress made of pine branches when

they spend time in the wild. They lay the branches on the ground inside a teepee and cover them with a piece of cloth or canvas.

9. In Martha's vocabulary, there were probably mono-gestural signs which had been created directly without going through any reduction process. I am thinking of those signs of high iconic transparency, e.g., the signs for hitting someone, eating or crying. We can always say that they too are pantomimes, but then they are mono-gestural ones.

10. Part of Martha's lexicon was rendered by facial expression, with or without accompanying gestures of the hand, e.g., QUESTION which is expressed through the facial channel, BEAUTIFUL and UGLY are both represented by the same hand movement (making a circular movement on the face with the hand) but differentiated by a pleasant or unpleasant facial expression. Here we are touching the limit of the segmental aspect of the signs. The suprasegmental aspect, i.e., the appreciatives, will not be dealt with in the present study.

11. One might say that the road is the least mobile element in the sequence. But in SL, the presence of the ground, in the present case the road, is often understood. Moreover, the setting of the two houses suggests the location of a road, a linguistic economy well exploited in SL.

12. I noticed that Martha, like the Chinese deaf, probably deaf mutes from some other cultural communities too, always formulated the comparisons from the superior to the inferior.

APPENDIX

BEAUTIFUL : FACE/APPEARANCE accompanied by a pleasant facial expression.

BOARDING VEHICLE : hands, relaxed, palm facing forward, raise hands slightly then plunge them to the front.

BREAK : fists side by side, palm side facing downward, pivoting fists brusquely, fists becoming palm side upward.

CAR : gesture of steering a car with both hands.

COLD : fists with their palm sides close to the chest, slightly trembling.

EAT/EDIBLE : gesture as if putting something into the mouth with a hand with all fingers joined at tips.

FACE/APPEARANCE : relaxed hand, palm side towards the face, make a circular movement.

FINISH : hands, relaxed, front pointing, palm side facing downward, hands separating sideways.

FISH : hand, front-pointing, palm facing sideways, making zigzag movements forward.

HEAVY : hands, palms upward, fingers slightly folded, raise hands simultaneously as if feeling a certain weight.

HELICOPTER : fist with only the index finger extended, pointing upward, making circular movements with the forearm (imitating the propeller of a helicopter in motion).

HOUSE : fingertips joined in the form of a roof.

KILL : hand pointing backward at one side of the neck, then pass the hand to the other side with fingertips in a slashing motion.

LIGHT (weight) : hands, palm upward, fingers slightly folded, raise hands simultaneously as if feeling no weight in them (relative to the HEAVY sign).

MAN : hand, palm inward, fingers half folded, making a back-and-forth movement along the upper lip from side to side (indicating the moustache).

MONEY : tracing a small circle with the tip of an index finger on the palm of the other hand.

MANY/MUCH : relaxed hands, palms upward, folding slightly fingers of both hands simultaneously a few times.

MINE/ME : pointing index finger at the chest.

PILL : tracing a small circle with the tip of an index finger on the palm of the other hand. (This sign is the same as MONEY. In case of ambiguity, the generic element EAT/EDIBLE will be added).

NOOSE : fists side by side, palm sides facing downward, with index fingers extended, pointing forward, turn fists to become palm sides upward so that the index fingers would at the same time trace a small circle (a noose) in the air.

PINE : fist, palm side downward, pivoting fist brusquely as if breaking a branch from a tree.

POT : tracing the shape of a bowl with both hands.

PREGNANT : tracing the profile of a pregnant body with one hand.

QUESTION : give a glance at the interlocutor while raising slightly the head.

ROULETTE (game of) : hand, relaxed, palm downward as if holding a pile of gambling chips while the other hand sweeping towards it.

SATELLITE : two loose fists, one slightly above the other, finger tips of each fist facing each other, one fist remains stationary while the other tracing a small arc on it.

SLEEP : head bending sideways, resting on the palm of a hand.

THINK : index pointing at the temple, making a few circular movements (movements at the wrist).

THREE : hand, up-pointing, palm side forward, the middle, fourth and little fingers extended and separated, thumb and index finger folded.

TRAIN : fists, by the side of the waist, palm facing sideways making pedaling movements.

TREE TRUNK : hands, palms curving facing each other about 8 to 10 inches apart, move hands upward simultaneously.

TV : hand, up-pointing, palm forward, shaking sideways gently.

UGLY : Same gesture as BEAUTIFUL but accompanied with an unpleasant facial expression.

WATER : gesture of opening a water tap.

WEDDING RING /MARRY : gesture as if putting a ring on the fourth finger.

WOMAN : hand at upper chest level pointing sideways, palm downward, pivot hand becoming palm upward tracing the breast of a woman.

REFERENCES

- Klima, E.S., Bellugi, U., et al (1979) The signs of language, Harvard University Press, Cambridge, Massachusetts, U.S.A.
- Kuschel, R. (1974) A lexicon of signs from a Polynesian outlier island - a description of 217 signs as developed and used by Kagobai, the only dead-mute of Rennell Island, Psykologisk skriftserie, Nr. 8, Psykologisk Laboratorium, Københavns Universitet.

- Yau S.C. (1977) "Constraints on basic sign order and word order universals", in Nonverbal communication today : Current research, Mary Ritchie Key ed., in Contributions to the sociology of language, Joshua A. Fishman, Editor-in-chief, the Hague: Mouton Publishers, in press.
- Yau S.C. (1979) "Natural word order in child language", The international journal of psycholinguistics, 6-2 (14): pp. 21-43.
- Yau S.C. (1981b) "Création d'anthroponymes gestuels par une sourde amérindienne isolée", to appear in Amerindia, numéro 7, 1982, Paris.



V

DISCOURSE



ON A CONTEXTUAL DEFINITION OF SENTENCE

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This paper has as its starting point the work of C.C.Fries as described in his well-known book *The Structure of English* (1952), and takes as unfinished business, Chapter 2 *What is a Sentence?*. I will briefly reconsider his discussions of the various definitions of the sentence, and will extend his approach by showing that any consideration of the definitions must necessarily be a consideration of how the contextual meanings of the 'Sentence' are signalled by the various grammatical roles of the Clause or the structure of the Clauses which make up the finalised grammatical form of 'Sentence'. This means taking a signalling approach to all the cues of grammatical status and function for the Clause in its 'Sentence', the most obvious being the cues of independence *versus* subordination, and independence *versus* question status. In short, the grammatical status of Clause and the syntactic boundary of Clause is central to the notion of 'Sentence'.

What I am saying about the Clause will be in conflict with the usual idea of 'Sentence' in present-day linguistics. The main conflict is one which this idea shares with traditional grammar, and this is the confusion caused by the conflation of the notions of 'sentence', and the 'clause as sentence'. Traditionally, the constituents of the clause 'subject' and 'predicate' have been called 'sentence structure' (e.g. Quirk et al 1972:33/44, and others), and the term 'clause' is used for talking about the elements of co-ordination and subordination. This conflation between Sentence and Clause when speaking of grammatical constituents can be explained to some extent by the fact that there is an area in grammar where the two notions coincide; this is where there is one Clause and this clause is independent. Such a coincidence of structure is compatible with the traditional notion of Simple Sentence, if by Simple Sentence we mean one independent clause without any subordinate clauses whatever e.g. no embedded clauses like who died in: the man who died was my friend.

It should be noted that Fries's discussion of Word Classes 1, 2, 3 and 4 are discussions of slots in 'frames' where sentence and clause coincide, the single clause independent clause e.g. The clerk remembered the tax (P.79). If we define the clause as having a subject and a predicate, then the subject of the clause here which is the clerk is also the subject of the sentence, and the finite predicate remembered the tax is also the predicate of the sentence. In short, Fries's frames for his Word Classes are Clause frames.

For this paper, I am adopting an item-in-context approach from Fries's signalling point of view, though I extend the context.

My view of item-in context is that we take the item in the context of its clause, and if there is more than one clause in the sentence, we take this clause in the context of the other clauses both inside and outside of the grammatical boundary of its particular sentence. I am interested in a parsing approach to the clause in its sentence : in parsing how each item in succession predicts the grammatical completion of this clause, and then in parsing how this clause or the finalised grammatical form of which it is one of several clauses predicts the semantic nature of the next clauses or clauses in the next sentence. In short, I am interested in the clause in its immediate environment of other clauses as part of a very limited discourse approach, an environment in which the grammatical status of the particular clause under study is crucial.

I wish to make four points about the sentence before proceeding. First, in keeping with my claim that the clause is the central semantic unit of sentence, I take the functional view. I see a fundamental contrast in information status between sentence, which I see as independence for the clause(s), and questions which I see simply as demands for completion by independent clause. Traditional definitions (e.g. Curme 1947:97 and others) lump together independent clause, exclamatory clause and question clause as kinds of sentence. From these three kinds of clause, I remove question clause. A question is not a sentence, but is a demand for a sentence; that is, a question clause is a demand for grammatical completion by independent clause which satisfies its demand for further information, whether wh-information or yes/no-information. Thus, the question provides the 'given' for which the independent clause(s) in sentence provides the 'new'. For the linguistic analyst, A.G.Hatcher (1956:234-50) proposed that question criteria should be part of our analytical tools for examining meaning in syntax, and more importantly, she noted that in our use of questions, "we must begin to learn to decipher context (including what follows as well as what precedes our predication)".

Secondly, as noted above, sentence now means the finalised grammatical structure of independent clause (our final offer of information in which there is both 'given' and 'new'). Any subordinate clause will be seen as a function of the independent clause to which it belongs. It follows that by 'sentence' I mean the finalisation of grammatical structure of the clause by independence. Thus, 'sentence' means independent clause function, whether declarative, exclamatory or imperative, even including changes of function e.g. Was he cross! where we have an exclamatory clause and not a question clause. Thirdly, when I speak of sentence, it is only after I have accounted for its clause or clauses according to their grammatical status of either subordination or independence. Fourthly, I wish to point out that I am speaking of the written sentence here; Monaghan (1982) will be speaking of the spoken sentence.

One of the notable omissions in modern theoretical linguistics since C.C.Fries's time has been a continuation of his discussion of the definitions of sentence. We have all tended to take the defini-

tion of sentence for granted when it should have been one of our central theoretical concerns. Fries noted that there were more than two hundred different definitions of sentence and noted that common school grammars continue to repeat the oldest definition of all; namely, "A sentence is a group of words expressing a complete thought." As Fries noted, then, this definition was still to be found in modern dictionaries. Here is an example from the Shorter Oxford English Dictionary of 1956: 6. "A series of words in connected speech or writing, forming the grammatically complete expression of a single thought; in pop. use such a portion of a composition or utterance as extends from one fullstop to another." I hope to show that the idea of a 'thought' is not as wrong-headed as it seems.

After discussing many definitions of the Sentence for the purpose of his description of telephone material, Fries reluctantly settled for Bloomfield's adaptation of Meillet's (1903) definition of independence of the clause: "Each sentence is an independent linguistic form, not included by virtue of any grammatical construction in any larger linguistic form." (Bloomfield 1933:130). I prefer Jespersen's version of Meillet here: "A sentence is a (relatively) complete and independent human utterance--the completeness and independence being shown by its standing alone or its capability of standing alone, i.e. of being uttered by itself." (The Philosophy of Grammar 1924:307). Fries's criticism of the Bloomfieldian sentence will be taken up below in the second part of the first definition.

Before discussing definitions of sentence, I want to make it clear that I see no objection to the term sentence when speaking to the layman about the piece of language between the full stops, but we should know what we mean by sentence. I also want to point out that my definitions of sentence are about the clause in its sentence function of independence. I find that no single definition will do in accounting for the contextual role of clause in sentence function, and offer instead a three-part complementary set of definitions with each of the three parts, hopefully, accounting for a crucial aspect of the clause in sentence function.

DEFINITION (1) IN TWO PARTS

The first definition is in two parts and requires that a sentence be both grammatically and semantically complete. Grammatical completeness is at once its most trivial and most crucial requirement. We need the Bloomfield definition to account for the syntactic boundaries of clause within sentence. Following C.C.Fries in a parsing grammar, we consider this point in Example (1) below.

(1) The Chinese are exceedingly

Here we have in print an example which nobody will accept as grammatically complete. First we have the syntactic cue of complement-to-come for the S V structure The Chinese are; next we have the signal by the morphology ly of the intensifier exceedingly which signals the semantics and syntax of adjective-to-come as complement. If we fulfil all the signals so far by supplying a grammatically predicted adjective complement like wise, we have a gramati-

cally complete clause e.g. The Chinese are exceedingly wise, and we have met the requirement for grammatical completeness. What this means is that we now have a minimum structure which makes sense as a unit in its own right to enter into meaningful relations with other like units in its larger utterance unit.

What parsing means in this context is that when we have fulfilled all the signals of Clause, we will eventually arrive at independent clause, and can begin to communicate in structures which are acceptable to our decoder as complete sense units in the way described above. This is the start of the communication between us. But the point is that this part of the definition only covers the autonomous grammar of independent clause, the requirement for communication to be transacted in minimum structures which make sense. We must distinguish between the autonomous 'making sense' of such a grammatical unit in its own right, and the additional and necessary contextual meaning which it gains from being part of a larger utterance unit. Such an utterance provides the context of preceding autonomous sense units whose individual meanings complete its contextual significance as a larger sense unit. This fact of completion by other sense units was pointed out by C.C.Fries in which he observed that there were 'sequence sentences' which signalled that they had a preceding sentence which supplied referents for the pronouns or substitute items e.g. every thing else as subject of the second clause of (2) below.

- (2) R-- says the committee is going to consider only budget matters today. Everything else must wait.
(Fries 1952:247)

Putting this differently, he was complaining that part of the meaning of the second sentence is supplied by the preceding sentence and that this raises theoretical questions about the nature of the linguistic unit implied by the Bloomfield definition of sentence. Rephrasing this, we say that the second part of this first definition requires that there be semantic completeness. There are two extremes in comprehensibility of the Sentence. At one end, there are those sentences which make a limited self-contained sense in respect of their lexical items e.g. The clerk remembered the tax; we don't have to go outside this sentence to know what the items clerk or tax means for the purpose of understanding the relation of the verb remembered. At the other end, there are those sentences which have a well-formed grammar but whose lexical items cannot be understood without reference to another sentence or more e.g. Everything else must wait. Such a sentence is semantically incomplete out of context. A common kind of semantic incompleteness is what I have called Unspecific Clause. We can state a simple rule for semantic completeness: that for every Unspecific Clause we must have a Specific Clause or Clauses for the Unspecific Clause to be fully understood (Winter 1982). Thus the sentence Everything else must wait is the Unspecific Clause whose Specific Clause has preceded it; that is to say, the anaphoric subject Everything else will not be understood out of this context, and we have a perfectly grammatical clause which lacks semantic completeness. We can accordingly regard the pair of sentences in (2) as

constituting a minimal larger sense unit for the purpose of understanding the second sentence.

In Example (3) below, we have another such minimal larger sense unit composed of two independent clauses in keeping with Fries's idea of a two-clause unit. In this instance, the first independent clause is Unspecific Clause:

- (3) The handling of giant tankers at sea already presents problems; although their service speed rarely exceeds 16 knots, they cannot be stopped like a car. A very large tanker takes well over two miles to come to rest....

Here in parsing the words, we encounter the items handling and problems, both unspecific lexical items, and we ask What problems of handling giant tankers at sea are these? We note that the next two independent clauses represent answers to this question. We also note that the second sentence answers the question: Why can't they be stopped like a car? With these two questions being answered, we now understand the specifics of the problem and why. These clauses provide the Specific Clauses by which the Unspecific Clause is understood, and our larger sense unit is minimally complete.

The linguistic point here is that the meaning of one clause (Unspecific) is a function of another clause (Specific). This part of contextual meaning between clauses is called Clause Relations: how we understand the meaning of one clause in the light of its adjoining clause or clauses (Winter 1971, 1974, 1977 and 1979). Developing this notion of the meaning of a clause being the function of other clauses, we note that the meaning of a particular 'sentence' is a function of its preceding 'sentences' so that these preceding sentences provide the 'given' for which the particular sentence is the 'new' information. We can extend this notion of context to the rest of the text and of course to its context of situation.

Summing up the first definition as a requirement on the encoder, we require (a) that the sentence be grammatically complete, and (b) that it be semantically complete as well.

DEFINITION (2) : THE 'KNOW' AND 'THINK' DEFINITION

The second definition is a mixture of ideas. It synthesises the well-known notions of Given and New, and Theme and Rheme. It also expresses the well-known cliché in communications teaching that we only communicate in terms of what our audience already knows. The 'think' part of the definition is new.

"A sentence is the communicative device we use to tell somebody something they don't know in terms of something which they do know, and where we think it relevant, to tell them what we think of what we have just given them to know, or what we think of what is already known."

(Winter 1982)

We note that each sentence we utter is a synthesis between 'new' (not known or previously verbalised) and 'given' (known or taken for granted as true); that we communicate the 'new' in terms of the 'given'. The definition explains one of the basic text re-

lations which I call Situation and Evaluation. Their explicit items are the words which would steer the reply to a question for the appropriate independent clause(s): "What is the Situation?", and then, "What is your Evaluation of this Situation?". Rephrasing these questions, we have: "What do you know?" and then, "What do you think about it, or How do you interpret the facts?". Consider the role of the last sentence in (4) below.

- (4) Mr. Johnson decided that there was a great deal to be said for saying nothing. He made no public statement and no private comment intended to find its way to the public. It was a wise policy.

The first two sentences tell us about what the writer knew of President Johnson's treatment of the public speculation about the work of the Warren Commission in 1966. The last sentence tells us what the writer himself thinks of President Johnson's policy, thus interpreting for us his view of the preceding facts. This last sentence meets the Priscian definition of sentence if by a complete thought we mean an independent clause reply to a what-do-you-think-of-it question.

I am oversimplifying the picture of text relations here. Every clause has a cue whether it is a know or a think clause. Some clauses have a cue of both. Consider the signalling role of the modal verb should have in (5) below:

- (5) You should have gone last night.

Here we have both Situation and Evaluation represented in the same clause. The Situation is the fact (know) that you did not go last night, and the Evaluation is the moralising should in the in the hypothetical should have gone. The question being answered here illustrates this: "What do I think of you(r) not going last night?".

The contrast in function between the independent clause and the wh-question clause can be seen in the difference of information status between them which the following definition brings out: "A wh-question clause is the device we use where we tell somebody what we already know or presuppose to be true, demanding that they complete the clause in respect of what we don't already know." (Quirk et al 1972:396 makes a similar point)

Summing up the second definition, we have noted that the significance of New is a function of the Given information of the sentence. The definition implies that there must be a complementary structuring of know and think information in our sentences to each other. Few will dispute that what makes 'facts' (Situation) interesting is what our encoder thinks of these 'facts' (his Evaluation). We might note at this point that a very common text structure is a utilitarian one whose most explicit form has a four part structure of Situation, Problem, Solution and Evaluation, with Situation and Evaluation acting as linguistic contextualisers of Problem and Solution. See Winter 1976 and 1979, Hoey (1982) and Jordan (1982).

DEFINITION (3) : TAKING THE SENTENCE ON TRUST AS TRUE

So far the first and the second definition have not directly

touched upon what the grammatical choices for independent clause signify to the decoder. Fries (PP. 17-18) unfortunately dismisses two definitions which were hot on this trail, that of John Ries (1931) and Karl Sunden (1941):

John Ries: "A sentence is the grammatically constructed smallest unit of speech which expresses its content with respect to this content's relation to reality" (P.17, my underlining).

Karl Sunden: "A sentence is a portion of speech that is putting forward to the listener a state of things (a thing meant) as having validity i.e. as being true." (P.18, my underlining).

Sunden's definition comes closest to what I see as the unmarked form of the grammatical choices for the sentence; that it is presented as true. It does not, however, cover the contingency where we know the sentence is not to be taken as true. I have taken this contingency into account, in a definition which I have framed from the decoder's point of view.

"Where there is trust, the natural tendency of the decoder is to take on trust as true the sentence as presented, unless it is otherwise signalled." (Winter 1982)

How might we interpret such a definition? Let us take the well-known example The King of France is bald. If we suddenly said this to some unsuspecting layman who didn't know the example, he would assume from the grammar of presentation that for us there is such a person as the King of France, and that he is indeed bald. Only his knowledge of the world would lead our victim to dispute the veracity of the signalling of this clause.

The definition takes into account the sociolinguistic fact of trust as a starting point: where there is trust in the encoder. If you have reason to believe that somebody is habitually untruthful, then he does not communicate with you because you don't believe him. The as presented notion means that 'taken as true' is the unmarked state of the clause e.g. The King of France is bald presents this physical description of the King as 'fact'. The rider unless otherwise signalled means that 'hypothetical' or 'neither true nor false' is the marked state of the clause. Such a signal otherwise is the matrix clause verb thinks in He thinks he has seen Martians which presents the enclosed clause (he has seen Martians) as Hypothetical in respect of the encoder of this matrix clause.

This definition enables us to account for the other basic text relation of Hypothetical and Real (See Winter 1974:272/301, and 1979:127). This relation is most noticeable in its most explicit form: where we repeat or report other people's clauses, re-interpreting them according to how we see the truth. The Hypothetical Member presents the clause which we are signalling as 'hypothetical', and the Real Member presents our 'findings' of the clause as true. We either affirm the clause or we deny it as true; that is, we start the structure of the Real Member by answering the Yes/no-question. A good place to find examples of

this meta-structure is in 'Letters to the Editor' in newspapers or magazines, where the writers often write in to deny statements attributed to them. Example (6) illustrates the structure of the Hypothetical and Real Members clearly.

Heading: WRONG MAG

- (6) Sir, Mr. Crewe last Sunday ('Flesh and the Devil') was very entertaining. We would have laughed out loud except they say laughing is fattening. The most laughable assertion in it, in our opinion, is the one which says we recommended Mars Bars to readers on a slimming diet. We didn't, and we wouldn't, and we think Mr. Crewe should apologise for getting his magazines mixed up.

June Swan, Editor, Slimming Without Tears

The Hypothetical Member is presented by the third sentence. Notice that the hypothetical clause is signalled by the verb say and the lexical item assertion which is evaluated as most laughable, an evaluation which implies a coming denial. Notice also the cue in our opinion. The Real Member is initiated by the Denial Clause We didn't. Notice that this clause answers the Yes/No-question Did you recommend Mars Bars to readers on a slimming diet? with a No-reply in its unmarked form. One marked form would be the paraphrase That is not true. Notice that the second clause and we wouldn't is an evaluation of the action denied by the first clause and that the third clause and we think etc. in turn evaluates the nature of the Real Structure so far by drawing conclusions as to what Mr. Crewe should do about being untruthful. The clause-relational semantics of the Denial Clause is a very important part of the study of Negation.

Finally, Example (7) illustrates the use of the lexical item hypothetical to signal the Real Member. The two sentences concluded a speech made by the Director of a college, where he was trying to calm his staff's fears of compulsory redundancies:

- (7) "As for the prospects of compulsory redundancies in the near future, it's all very hypothetical. I don't know-nobody knows."

Notice that the Real Member confirms the Hypothetical Member as hypothetical; that is, the speaker is signalling that he has no 'facts' or basis to go by. Notice in particular the broadening of I don't know as the Basis for saying something is Hypothetical by the all-inclusive Nobody knows. Here we observe the contextual meaning of hypothetical as 'I don't know - nobody knows.'

Summing up the third definition, we have noted that the contextual meaning of the grammatical choices of clause leading to independent clause(s) or 'sentence(s)' is that we are telling the truth; that the unmarked state of our clause is to present its contents as true. Where we signal otherwise, this is the marked state of the clause. The most explicit form of the marked state is the basic text relation of Hypothetical and Real, where the clause which is cued as 'hypothetical' may be affirmed or denied by the clause which is cued as 'real'. Studies of Negation

should be made in this area of language.

CONCLUSIONS

We now restate the three definitions as requirements which the decoder might make upon his encoder. The first requirement that the encoder produce a grammatically complete sentence is a vital first step. To it, we add the requirement for semantic completeness. This points up the idea that the contextual meaning of one clause is a function of its preceding clauses in the utterance. The second requirement is to be told something we don't know in terms of something which we do know. This is not merely an extension of the 'given' and 'new' notion; it is also concerned with the kinds of information in the clause. In being told something, we distinguish between 'fact' or 'know' information and 'evaluation' or 'think' information. The third requirement is that we have to take what our encoder says on trust as true unless he indicates otherwise. The state of indicating otherwise is what our cues of hypotheticality are for.

In considering what we might do with these requirements, we might start by examining the well established use in linguistics of the made-up example which has been criticised by Labov (1975). A curious, but not surprising, feature of made-up examples is that they are SPECIFIC CLAUSE. How long might theoretical linguists have persisted in their attempts to make discoveries by speculating about made-up examples if they had chosen UNSPECIFIC CLAUSE?

ACKNOWLEDGEMENTS

I am very grateful to Jim Monaghan for his most helpful discussion of the ideas in my paper, and to Nicholas Harper for his proof-reading. I am also very grateful to Mrs. Doreen Gepp for her painstaking typing of the manuscript.

REFERENCES

- Bloomfield, L. 1933. LANGUAGE. Allen & Unwin. London.
 Curme, G. 1947. ENGLISH GRAMMAR. Barnes & Noble Inc. New York.
 Fries, C.C. 1952 (1961 ed) THE STRUCTURE OF ENGLISH. Longmans Green.
 Hatcher, A.G. 1956. Syntax and the Sentence. WORD Vol. 12. Dec. 1956.
 Hoey, M.P. 1982. Discourse Stylistics- A Way Forward?
 EIGHTH LACUS FORUM.
 Jespersen, O. 1924. THE PHILOSOPHY OF GRAMMAR. Henry Holt. New York.
 Jordan, M.P. 1982. Information Structuring To Select High-Priority Information. EIGHTH LACUS FORUM.
 Labov, W. 1975. WHAT IS A LINGUISTIC FACT? Lisse: Peter de Ridder Press
 Monaghan, J. 1982. On the Phonological Signalling of Text Structure. EIGHTH LACUS FORUM.
 Quirk, R. Greenbaum, S. Leech, G.N. & Svartvik, J. 1972.
 A GRAMMAR OF CONTEMPORARY ENGLISH. Longmans
 Winter, E.O. 1971. 'Connection in Science Material; A Proposition about the Semantics of Clause Relations'
 C.I.L.T. Papers & Reports No 7 London PP.41-52.

- Winter, E.O. 1974. REPLACEMENT AS A FUNCTION OF REPETITION. Ph.D. Dissertation. University of London. University Microfilm Ref. 77-70,036.
- " 1977. 'A Clause-Relational Approach to English Texts' INSTRUCTIONAL SCIENCE. Vol.6 No. 1 Special Issue. January 1977. PP.1-93.
- " 1979. 'Replacement as a fundamental function of the Sentence in Context' FORUM LINGUISTICUM. Vol. IV. No. 2. December 1979. PP.95-133.
- " 1982. TOWARDS A CONTEXTUAL GRAMMAR OF ENGLISH. Allen & Unwin. London (in press).

DISCOURSE-CENTRED STYLISTICS -- A WAY FORWARD?

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The study of literary language by linguists has always promised two types of insight.¹ The first is insight into the individuality of a writer's style; indeed the very name 'stylistics' reflects that concern. Milic (1967) on Swift and Ohmann (1962) on Shaw and (1964) on Faulkner represent early successes in this area. The second is as a tool for the interpretation of individual works; here successes have perhaps been more sporadic and have been more dependent on the individual than on the development of useful techniques of analysis, with literary critics having at times justification for their oft-voiced suspicion of linguists' interference in their discipline. One reason for this has been that systems of analysis centring on the sentence have only been revealing about eccentric works. Those many works whose individuality does not rest in any syntactic deviance have for the most part not been illuminated by sentential analysis. The burgeoning research in discourse analysis over the past decade offers, however, the possibility of approaching these works in a new and more productive way. If every discourse has a unique organisation, then it follows that one way of identifying the individuality of a work is by analysing its organisation as discourse. In Hoey and Winter (forthcoming), based on an earlier unpublished paper by Winter, we attempted to show how a new interpretation of Julius Caesar grew naturally out of the detailed analyses of the speeches of Brutus and Mark Antony at Caesar's funeral. In this paper I seek to demonstrate that the discourse analysis of a poem by John Donne results in a greater number of readings for the poem and a synthesis of those readings; at the same time it serves to test and challenge the descriptive system used.

A detailed account of the descriptive system to be employed on the poem would be out of place here. A short account must however be attempted. The approach described is derived from the work of Winter (particularly 1974, 1977, 1979) and his associates (particularly Jordan 1978, 1980, in press and Hoey 1979, in press). Certain basic assumptions are made about the

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1. This paper has been informally presented to two seminars within the University of Birmingham, one a postgraduate literature seminar led by Professor David Lodge, the other a postgraduate and staff English language seminar. Both groups made valuable comments for which I am most grateful. I am also grateful to Dr Eugene Winter who saw an early draft of this paper and made a number of helpful suggestions.

nature of written discourses based on years of detailed analyses of short discourses. Firstly, it is assumed that every clause in a discourse is in at least one semantic relation with at least one other clause or group of clauses in that discourse. Secondly, it is assumed that out of a finite number of such clause relations an infinite number of patterns of organisation may be built. Every discourse has therefore a potentially unique organisation. Thirdly, it is assumed that the clause relations in a discourse may be between clauses, groups of clauses, or parts of clauses; in other words the relation is no respecter of syntactic boundaries though its realisation is necessarily rooted in the grammar of the clause. Fourthly, it is assumed that certain patterns of organisation have become culturally dominant, of which the problem-solution pattern is a particularly good example. This has three essential parts - a statement of an aspect of the situation requiring a response (or problem), a response (whether suggested or carried out), and an evaluation of the effectiveness of that response. (See Winter 1976, Hoey 1979, Jordan 1980.) If the evaluation is negative, then the problem is deemed unsolved and further responses are expected by the reader to follow. Fifthly, it is assumed that clause relations are an abstraction of the connections readers make between the parts of a discourse as part of the effort of understanding the discourse; those connections are aptly and more precisely represented as questions asked of the discourse. What this means is that every reader is engaged in a dialogue with the discourse being read. Sixthly, lastly, and most importantly, it is assumed that the clause relations and the patterns of organisation which they form are identifiable by means of signalling devices of various kinds including subordination, conjuncts and lexical signals and by projecting the discourse into question and answer dialogue. Signals of clause relations also include systematic repetition which may signal matching relations of, for example, compatibility and contrast; examples will be considered in the poem to be analysed.

All the assumptions listed have been defended elsewhere. (See Winter 1974, 1979, and in press, Hoey 1979, in press, and Hoey and Winter forthcoming.) Brevity prevents a repetition of that defence here. The extent to which they are able to account for the fact of the particular discourse we shall be considering will however serve as some sort of test of their validity.

One extra assumption needs to be added when the object of study is a literary discourse, namely that the implied writer (i.e. the writer required to understand the discourse who may or may not tally with the real writer) may also be in dialogue with an implied reader (who may well be different from the actual reader). Thus in the poem that follows the implied writer is a repentant sinner who is in dialogue with an implied reader who is God the Father.

The approach to be used involves analysing the poem in the light of all these assumptions; out of the understanding of the

poem thereby achieved, readings of the poem are created and checked against non-linguistic evidence. Donne's Hymn to God the Father was chosen because it seemed prima facie to have an organisation worth explaining.

A Hymne to God the Father:

- I Wilt thou forgive that sinne where I begunne,
 Which was my sin, though it were done before?
 Wilt thou forgive that sinne; through which I runne,
 And do run still: though still I do deplore?
 When thou hast done, thou hast not done,
 For, I have more.
- II Wilt thou forgive that sinne which I have wonne
 Others to sinne? and, made my sinne their doore?
 Wilt thou forgive that sinne which I did shunne
 A yeare, or two: but wallowed in, a score?
 When thou hast done, thou hast not done,
 For I have more.
- III I have a sinne of feare, that when I have spunne
 My last thred, I shall perish on the shore;
 But sweare by thy selfe, that at my death thy sonne
 Shall shine as he shines now, and heretofore;
 And, having done that, Thou hast done,
 I feare no more.²

There are a number of ways of viewing this poem, all of them overlapping with each other. These are as a series of problem-solution patterns, as a dialogue between 'Donne' and God the Father, as a network of cohesive devices setting up ambiguous readings, as a dialogue between the discourse and the reader, and as a series of Matching patterns. Wherever we begin we will need the others, so we might as well begin with the poem as problem-solution pattern.

The first verse has the pattern:

that sinne where I	)	
begunne, which was	)	
my sin, though it	)	Problem
were done before	)	
Wilt thou forgive...?		Possible Response
that sinne; through	)	
which I runne, and	)	
do run still: though	)	another Problem
still I do deplore	)	

2. Text taken from Poetical Works of John Donne, edited by Sir Herbert Grierson (1933), London: Oxford University Press.

Wilt thou forgive...? same Possible Response

When thou hast done,) Negative Evaluation of Possible Response
 thou hast not done) (which reinstates the Problems)

For, I have more Reason for Negative Evaluation

The second verse has an identical pattern. The third verse offers however a variant, whereby the first two lines are Problem, lines 3-4 are Possible Response, line 5 is Positive Evaluation of Possible Response (thereby closing the pattern) and line 6 is either the Reason for or the Result of the Positive Evaluation.

Apart from this last aberrant line which we will return to, the poem appears to be organised according to the normal Problem-Solution pattern. Consideration of the poem as dialogue between 'Donne' and 'God' serves to make the pattern more complex. To begin with, we must ask what status the possible Response has. We may read the interrogative Wilt thou forgive? in verses 1 and 2 in three ways. Firstly it may be read as an example of the discourse act informative (all discourse act terms are taken from Sinclair & Coulthard (1975)) i.e. as a rhetorical question. In this reading it is equivalent to saying Thou wilt forgive or perhaps Thou sayst thou wilt forgive. Interpreted this way the Response must be read as actual Response and the when thou hast done clause becomes simply a time sequencing clause with no conditional meaning.

Secondly, Wilt thou forgive? may be read as an example of the discourse act elicitation i.e. as a real question. In this reading it is equivalent to saying Tell me whether thou wilt forgive. Interpreted this way, the Response can only be a possible Response, not a certain one. If however it is an elicitation, a reply has to be given or assumed given if the discourse is to continue. The most natural way of reading the when thou hast done clause in such circumstances is to assume that the answer yes has been given. Even so certainty is not as complete as in the first case, and when carries with it the slight possibility of a conditional meaning.

Thirdly, Wilt thou forgive? may be read as an example of an act akin to directive, namely a request. In this reading, it is equivalent to saying I request that thou wilt forgive or, more naturally, I pray that thou wilt forgive. As with the elicitation reading, the Response can be only a possible Response. There is no need to assume that an answer need be given to the request before the discourse can continue. Although in my experience petitions in prayer are usually answered, part of the conventions of a prayer is that one does not wait for the fulfilment of a petition before continuing. Since there is no assumed assent to the request, the when thou hast done clause can only be read as conditional, i.e. when and if thou hast done. Depending therefore on the act Wilt thou forgive? is interpreted as performing,

we arrive at different conclusions as to whether or not the sins are forgiven. This uncertainty is important because it will affect our reading of the last verse.

Looking now at the poem as a network of cohesive devices, we encounter further complications. In the penultimate line of verses 1 and 2, thou hast...done can be interpreted in three different ways. Firstly, with stress on hast, it can mean thou hast forgiven the sin, where done is acting as a pro-form for forgiven the sin. Secondly, with stress on done, it can mean thou hast finished, done here functioning as a full verb. Thirdly, with stress on both hast and done, it can mean thou possessest the poet Donne in true metaphysical punning fashion. This gives us at least three good uncontradictory readings for the line:

- (1) When you have forgiven these sins, you haven't finished,
- (2) When you have forgiven these sins, you still don't possess me,
- (3) When you have finished forgiving me, you still don't possess me,

and three contradictory ones:

- (1) When you have finished, you haven't finished after all,
- (2) When you possess me, you still don't possess me after all, and, most strikingly, the apparently blasphemous
- (3) When you have forgiven these sins, you haven't forgiven them after all.

Whichever reading is taken, For I have more is offered as the reason for the failure, and this too is interpretable in several ways. The ellipsis after more is irresolvable; more may refer to more sins, more to forgive, or more to say, the last reading being possible if we interpret wilt thou forgive as prayer. All of these readings will suffice to explain why God has not finished forgiving Donne but none of them is adequate to explain the apparently blasphemous reading that God's forgiveness still leaves the poet unforgiven. Either we must abandon this reading as unacceptable or we must seek another explanation in the discourse organisation.

The poem is not only to be seen as a dialogue with God but, according to the descriptive system outlined earlier, also as a dialogue with the reader. Much of the dialogue within the verses between the poem and reader has already been indirectly spelt out in our analysis so far. What has not been spelt out is the relationship between the verses. After For I have more in verse 1 there is only one question a reader can reasonably ask of the poem, namely What is your more?, in which case verse 2 will be seen as supplying the answer. Likewise verse 3 will be seen as supplying the answer to the same question raised by the end of verse 2. This makes sense of one of the contradictory readings of the penultimate line of verses 1 and 2. It is obviously true that God has not finished forgiving Donne's sins if he has more to

confess. On the other hand, if we take the apparently blasphemous reading, we are still left with the uncomfortable argument that the reason why the sins in the first verse cannot be forgiven is because of the sins in the second, and the reason why the sins in the second cannot be forgiven is because of the sin named in the third. On the face of it this argument appears to make no sense. Here, however, we can no longer operate as discourse analysts without reference to non-linguistic real-world knowledge. For the rules of the confession box are that if you consciously withhold any sins from the confession the confession is invalid. Until the confession is complete therefore, the first sins remain unforgiven. Only when the last sin is confessed does the forgiveness become operative.

That is a satisfactory solution as far as it goes but it can only be the full solution if we abandon the informative and elicitive readings of Wilt thou forgive? Must we then lose these readings? Let us consider the relationship between verses 1 and 2 from another point of view. The repetition within them and between them shows that they are organised by a number of Matching relations in addition to the relations we have already mentioned. To begin with the Matching within them, lines 1-2 are matched with lines 3-4 in verse 1. If we set them out in table fashion we find that they are matched for similarity.

	Wilt thou forgive that sinne	where I begunne,	which was my sin	though it were done before?
	Wilt thou forgive that sinne	through which I runne	and do run still	though still I do deplore
shared feature	repetition	I sin	I sin	mitigating circumstances
differ- ence		Past v present	Past v present	nature of circumstance

Likewise lines 1-2 are matched with lines 3-4 in verse 2, though less closely:

	Wilt thou forgive that sinne	Ø	which I have wonne others to sinne? and made my sinne their doore?
	Wilt thou forgive that sinne	which I did shunne a year or two	but wallowed in, a score?
shared feature	repetition		aggravating circumstance
Differ- ence		mitigating circumstance	nature of circumstance

In addition to the Matching within each verse there is Matching between them as well, but the Matching is for difference rather than similarity, the difference lying in the contrast between verse 1's mitigating circumstances and verse 2's aggravating circumstances. It will be noticed that this not only supports the confessional reading as a valid reading but goes some way to supporting the other readings as well, more taking on the meaning of worse. This however would have the effect of making verse 3's sin the worst sin of all, discourse organisation normally demanding that a progression of bad and worse be followed by worst. We look then to verse 3 to resolve our difficulties.

Verse 3 is different in a number of respects. To begin with, lines 3-4 are couched in the form of a request. The readings of certainty (rhetorical question) or probability (real question) are not therefore available for the Response element of the Problem-Solution pattern in this verse. Secondly, having done that does not allow the multiple readings available for when thou hast done; it can only mean having sworn that. This then leads to three readings for line 5 of this verse:

- (1) Having sworn that, thou hast finished forgiving me
 - (2) Having sworn that, thou hast forgiven me
- and
- (3) Having sworn that, thou possessest the poet Donne.

Thirdly, I feare no more, as was remarked earlier, can be read either as a Reason for Thou hast done or as the Result and Positive evaluation of it. If we consider the dialogue between reader and discourse, it answers equally well the reader's question Why? or What is the result of this? On the face of it, it makes no sense and we would appear to have to reject one of these readings. Once again we must call on our non-linguistic knowledge to rescue us from our discourse analytical impasse. It is fundamental to Christian belief that to receive God's forgiveness we must first put our trust in Christ; this is expressed in Acts 26, for example, in Christ's reported words 'By trusting in me they may obtain forgiveness of sins' (New English Bible translation). This pulls all the discourse readings and the problems arising out of them into a harmonious whole.

If our sins are forgiven if we trust in Christ, then lack of trust means that our sins are unforgiven. Thus the sin of fear potentially means that the other sins are not forgiven. Our first difficulty is thereby overcome. Our contradictory and blasphemous readings are neither contradictory nor blasphemous: we can keep them. Our second difficulty is also overcome. We are not dependent on Wilt thou forgive? being read as prayer for our interpretation of thou hast not done: we can keep the rhetorical question and real question readings. One difficulty only remains, can we know whether the Response is actual or not? In other words, does 'Donne' get forgiven? The ambiguity of

function of the last line of verse 3 resolves the difficulty.

If the last line of the poem is both Reason and Result, we have an unbreakable circle, in which fearing no more leads to forgiveness and forgiveness leads to fearing no more. Everything then depends on God's swearing, which precedes both forgiveness and fearing no more whichever comes first. If He swears, 'Donne's' only block to forgiveness is removed because that will give 'Donne' the grounds he needs for trust. If He does not swear, then nothing is forgiven.

This uncertainty is central to the poem; everything is dependent on whether God answers the final petition which, as it is not a rhetorical or real question, does not presuppose an answer within the poem. Three features however lead us to believe that 'Donne's' Problem is successfully solved:

- (1) I feare no more is ambiguous in its time reference; it may refer to a hypothetical future or to an actual present. If it is read as the latter, the circle is broken.
- (2) The act of asking for forgiveness of the sin of lack of trust is itself an act of trust. Once again then the circle is broken.
- (3) God is asked to swear 'by thy selfe'. In other words 'Donne' is willing to take God's authority as a basis on which to believe what He swears. This is an act of trust. This too therefore breaks the vicious circle. We may take it that the problem is successfully solved; 'Donne's' sins are forgiven.

The analysis just completed seems to have several implications for work in discourse analysis and stylistics. Firstly, the use of a system of discourse analysis can produce a variety of useful readings of a literary discourse and supply literary critics with precisely defined problems for them to solve. Secondly, the success of such an approach in producing useful readings indirectly reflects favourably on the discourse assumptions made at the beginning. Thirdly, only an approach that allows for multiple simultaneous relations between the parts of a discourse is adequate to account for the complexity of a poetic discourse. Fourthly and finally, there must be allowance made in any system of discourse analysis for non-linguistic data.

To sum up, the study of discourse stylistics promises discourse analysts a useful testing ground for their hypotheses about discourses and literary critics a useful tool for illuminating literary works and highlighting matters within them requiring explanation. It would therefore appear to offer a fruitful way forward for both discourse analysis and stylistics, and is, after all, a natural development from both.

- Hoey, Michael (1979) Signalling in Discourse, Discourse Analysis Monographs No. 6, Birmingham: English Language Research, University of Birmingham.
- Hoey, Michael (in press) On the Surface of Discourse. London: George Allen & Unwin.
- Hoey, M.P. & Winter, E.O. (forthcoming) 'Believe Me for Mine Honour: a stylistic analysis of the speeches of Brutus and Mark Antony at Caesar's funeral in Julius Caesar from the point of view of discourse construction', Language and Style (accepted for publication - 1977)
- Jordan, Michael P. (1978) The Principal Semantics of the Nominals 'This' and 'That' in Contemporary English Writing, Ph.D Thesis, CNAAL, London. University Microfilms 78-70031.
- Jordan, Michael P. (1980) 'Short texts to explain Problem-Solution Structures - and vice versa. An analytical study of English prose to show the relationship between clear writing and clear thinking', Instructional Science 9.3.221-252.
- Jordan, Michael P. (in press) Fundamentals of Information Structure London: George Allen & Unwin.
- Milic, Louis T. (1967) A Quantitative Approach to the Style of Jonathan Swift, The Hague: Mouton and Co.
- Ohmann, Richard (1962) Shaw: The Style and the Man, Wesleyan University Press.
- Ohmann, Richard (1964) 'Generative Grammars and the Concept of Literary Style' Word XX 424-439, reprinted in Freeman, Donald C. (ed) Linguistics and Literary Style (1970).
- Sinclair, J.McH & Coulthard, R.M. (1975) Towards an Analysis of Discourse: The English used by teachers and pupils, London Oxford University Press.
- Winter, Eugene O. (1974) Replacement as a Function of Repetition: a study of some of its principal features in the clause relations of contemporary English, Ph.D Thesis, University of London. University Microfilms 77-70036.
- Winter, Eugene O. (1976) Fundamentals of Information Structure: a Pilot Manual for Further Development according to Student Need, Mimeo: The Hatfield Polytechnic.
- Winter, Eugene O. (1977) 'A clause-relational approach to English texts; a study of some predictive lexical items in written discourse' Instructional Science (special issue) 6.1.1-92.
- Winter, Eugene O. (1979) 'Replacement as a fundamental function of the sentence in context' Forum Linguisticum.
- Winter, Eugene O. (in press) Towards a Contextual Grammar of English, London: George Allen & Unwin.

STRUCTURE, MEANING AND INFORMATION SIGNALS OF SOME VERY SHORT TEXTS - an introductory analysis of everyday English prose

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Situation

Categories of 'Situation-Problem-Solution-Evaluation' have been discussed (Winter 76, Hoey 79, Jordan 80) as providing meaningful insight into the structure, meaning and information signalling of medium-sized and short texts in English, and more recent work by Hoey and Jordan (forthcoming) develops the principles further. I will here describe and extend the use of these categories as a basis for the critical assessment of many very short texts - often of one or two sentences.

It has been shown that many texts of everyday English prose readily yield to sensitive analysis based on these four categories of information. The four categories together constitute a satisfyingly complete account to a reader as they provide just enough for him to understand the message and to know what other information he might possibly want to elicit. It has also been established that the omission of one or more of these categories can be explained when the reader already knows that information, or when he can readily deduce it, or when the information is not available.

A key factor in being able to recognize most of the prose structures discussed here lies in the identification of a problem as signalled in the text. 'Problem' here is used in a very wide sense - much wider than the category of 'conflict' in the analysis of plays and novels. In this analysis, 'problem' means any sense of dissatisfaction or any unpleasant, undesirable or dangerous thing or situation. The signalling of a perceived problem in a text is the basis for the reader expecting to be told of an actual, attempted or proposed solution; and he then expects to be told how effective that solution is or was. English is very rich in the signalling of problems, solutions, and evaluations, and an introduction to some of the signalling is provided here.

It is important to note that we are dealing with the meaning of items in context. The item corrosion cannot be labelled as a problem out of context (corrosion of garbage is highly desirable), but it is recognized as a signal of problem in Example 11. Similarly prevents is seen to evaluate peening process as a solution to this problem, but in another context (e.g. "He prevented her escape.") it would signal a problem to the would-be escaper.

The area of analysis is determined by the selection of the texts analyzed. No texts have been selected for structures of

'Situation' or 'Situation-Evaluation'. However, the structures illustrated and analyzed here are very common and must account for a significant proportion of short texts. Just how pervasive these structures are in use is properly a matter for separate study.

Problem

The purpose of this paper is to describe and extend the use of prose structure analysis as an exegetic tool for the critical appreciation of short texts and summaries in everyday written English. This involves analysis of the structure, meaning and information signalling of texts selected to loosely represent many of the short texts to be found, and the selected texts and their provenances are given later. Note that the provenance, date of publication, intended readership, and situation of use of many of the examples are factors which can vitally affect their analysis. Note also that the viewpoint of different readers can radically alter the analysis.

The aim of the analysis of structure is to explain the order in which categories of information are communicated, with discussion of related signalling devices. Analysis of meaning is to determine the principal meanings (as perceived by the intended reader) not only of the whole text, but also of the informational groups within the text. The aim is to identify what types of information are present and what types are not present, and then seek to answer why? Finally, the purpose of the analysis of information signalling is to identify and interpret signals that tell the reader what type of information is being presented at different points in the text, and when the text is changing from one type to another.

Signalling is of great concern to us. We would expect an experienced literary critic to provide meaningful analysis of both structure and meaning of a text based solely on his developed skills in language analysis. What we as linguists can offer in addition is a detailed account of the precise signalling devices in the text that lead to such an analysis. These signals may be phonological (or their orthographic counterparts), morphological, lexical, grammatical or contextual; they may be apparent as indicators of time and tense or as negators; they may require interpretation of phrases, clauses, sentences, or even paragraphs; or they may involve juxtaposition or sentence proximity. They may of course be present as complex combinations of these signals. Thus in this analysis the identification of structure signalling devices is a prime objective.

The overall aim is to provide a basis for the analysis of short texts principally for their structure, meaning and information-guiding signals. I accept the Firthian tradition of text analysis, acknowledging that the total meaning of a text involves the integration of several layers of analysis. I see prose structure analysis as only one such layer, and make no claims that it provides a total interpretative analysis of the texts or the area of prose they represent.

Solution

Each example is presented with an explanatory title, its provenance, date, and details of any other special features. This is followed by its analysis, in which reference to specific parts in the text are underlined. Because of space limitations, only very brief analysis is provided for most examples, but the first example is analyzed in some detail to illustrate what is possible.

(1) Basic Four-Part Structure

Jean: "You look tired Sally."

Sally: "Yes, Peter's teething. I was up with him all night."

Jean: "You ought to try ANBESOL. Susie's teething doesn't give any trouble now."

Sally (later): "Jean was right. ANBESOL has soothed Peter's gums already."

(Parents, Sep 79, P44)

This is taken from an illustrated "comic-strip" advertisement, and the artwork adds considerably to the text.

The situation is illustrated as a clinic attended by two young mothers (one obviously very tired) each holding a baby. Jean suggests that Sally (the tired one) looks tired (a problem). Sally affirms her tiredness with Yes and then gives the reason in terms of the initiating cause (Peter's teething) and the resulting cause (I was up with him all night), both of which are problems. There are two end problems: the fact that Sally is tired, and the unattractive look of tiredness. Sally's affirmation is probably for both.

Jean's suggested (signalled by ought to) attempted (signalled by try) solution is ANBESOL, and this is followed by her positive evaluation of it. Note her implied application of ANBESOL to Susie's gums (it is not actually stated), her situation (Susie's teething), her problem (trouble with Susie's teething, and the evaluation (the negation doesn't give). Time and tense are important signals here - especially the use of now to indicate the end of a problem.

The scene then changes to show Sally lying peacefully in bed with a male friend. Again there is implied use of ANBESOL, this time to Peter's gums. Her first sentence (Jean was right) affirms Jean's suggestion to use ANBESOL as being a good one. The final sentence is an evaluation of the effectiveness of ANBESOL for Peter in that it has soothed his gums. Use of already signifies the speedy relief provided and also Sally's surprise at the speed.

This example follows the normal time-oriented sequence of Situation-Problem-Solution-Evaluation - a sequence which is almost unalterable given the comic-strip format.

(2) A Minimally Complete Account

"Time: 0625 hrs. Type of Target: Enemy Dispatch Rider. Number of Rounds Fired: Five. Result: Made Dispatch Rider Accelerate."
(Report from Artillery Post, Normandy, France, 44)

The four parts are easily identified, and the report is time-oriented. The time (0625 hrs) is a part-situation, more of which is given by the provenance; readers of the report would know the background situation, and so further background information is not necessary in the report. Note the signalling of problem (enemy) and the evaluation signals Result and Made; the failure of the attempted solution does not alter our approach to the analysis. The compressed grammar is interesting, indicating new information (Type of Target and Number of Rounds Fired) in a known thematic position.

(3)

No Evaluation?Tack Holder

Whilst making roller blinds, I had great difficulty in holding the tiny tacks that attach the blind to the roller. To hammer these tacks in was virtually impossible until I had the idea of holding them in the teeth of a small hair comb.
(Practical Householder, May 80, P14)

The situation is made clear in the subordinate clause, the Whilst indicating when the problem was perceived. The problem (difficulty) is evaluated as great and then specified in the remainder of the first sentence. The reason for his need to hold the tiny tacks in... is identified as To hammer these tacks in, and the problem with this is specified as virtually impossible. The time signal until indicates the end of the problem when the idea was thought of (the solution), and this is then detailed. This is the only evaluation offered for the idea as readers can easily deduce that the idea worked. The order is Situation-Problem-Solution.

(4)

Some Implicit Situation

"Thank you for your suggestion, Miss Hartley but I'm afraid using plastic clips won't make much impact on our steel shortage problems."
(Procurement Weekly, 5 Mar 80, P5)

This is the caption to a cartoon. The illustration shows a procurement officer (note provenance) at his desk in a building on an industrial complex. Miss Hartley is facing him. A steel strike had been in progress for several weeks when this caption appeared.

The suggestion is a suggested solution, which we later learn is using plastic clips (instead of steel ones) to reduce their steel shortage problems. The situation of the strike is not mentioned as it is assumed to be known by readers. Details of the extent of the shortage are also missing. The suggestion is adversely evaluated by the negation won't and make much impact..., but and I'm afraid being harbingers of this rejection. Note that the order is: indication of suggested solution - harbingers of rejection - solution - adverse evaluation (rejection) - problem with some situation; the order Solution-Evaluation-Problem (-Situation) is common when the information is condensed into a

single sentence (also see Example 11). The pre-modifier steel is the only situation given in the text, but more is implied in the illustration.

(5) Known Situation and Problem

Dear Parents,

The school is trying to ensure that all the children's clothing is labelled. To assist parents the school can supply IRON-ON NAME TAGS.

(Bayford JMI School, Herts, England)

The situation is that all children wear a uniform, and problems occur when they change for games or take off their jackets during hot weather. The clothing gets mixed up and no one knows who owns the clothing. This situation and problem are so well known that there is no need to include it in the letter. The solution is given in the first sentence with the suggested means of achieving the solution next. Details of the tags are given later (not included here), but there is no evaluation as the solution obviously overcomes the problem. The structure is simply 'Solution'.

(6) Problem Identification

"Steep Hill" - Road sign

This identifies a possible problem within a given situation on a roadway. No solution is given here, as that is left to drivers. A solution "Trucks use low gear" is often given for heavy vehicles. For very steep hills a solution "Runaway truck ramp" might be signalled in case a real problem actually emerges.

(7) Problem - Solution

ALONE! Meet new friends of the opposite sex. Sincere service, low fees. Countrywide Introductions.
(Here's Health, Jan 80, P131)

The problem is being ALONE!, with emphasis being placed by the punctuation. The suggested solution is given in the second sentence with the use of the imperative - a common signal of solution. The means of achieving the solution are implied in the remainder of the advertisement. How well this service works is not mentioned, and readers have little basis for making their evaluation. The 'Problem-Solution' structure is typical of advertising.

(8) Solution - Problem with Some Situation

Vickers is laying off 350 workers at its Elswick defence system plant. Not enough orders.
(The Economist, 29 Mar 80, P85)

Vickers had a problem of Not enough orders and their attempted solution was laying off 350 workers. Some situation is given by Elswick defence systems plant, but the wider economic

situation is not mentioned. The order solution-problem stresses the solution, and the problem is further reverse marked by the incompleteness of the final sentence. Note that Vickers's solution creates a problem for the workforce - an example of what I have termed 'people problems' - and that, to workers, Not enough orders is the initiating cause of their problem.

(9) Solution - Problem, with Complications

POLITE NOTICE Customers are requested, in their own interests, not to park on the pavement as this is causing inconvenience to residents.

(Trawlerman Fish Bar, Hatfield, England, Aug 80)

 The solution is given by requested rather than the imperative, customers being asked not to park on the pavement (pavement is British use for sidewalk). We can assume that customers have been parking on the pavement, and we are told that this is causing inconvenience. Thus we have an action causing a problem, and the suggested solution is to stop the action. Use of in their own interests hints at 'people problems' caused by possible retaliatory solutions by residents (e.g. deflated tires, broken headlamps). Perhaps the writer hoped that POLITE NOTICE would be misread as POLICE NOTICE.

(10) Solution - Evaluation

Pop a coffee bean under a very hot grill when you go into the kitchen to make instant coffee for your guests. The smell of the bean browning will make them think they are getting the real thing.

(Family Circle, Apr 80, P30)

 The implied situation is any home, and the problem is the need for the host to give the wrong impression. The solution and the evaluation appear in the two separate sentences.

(11)

Peening Process Prevents Intergranular Corrosion of Stainless Steels

(Title, Engineers' Digest, Apr 76, P16)

 In the situation of stainless steels, corrosion is seen as a problem, and thus anything that prevents it is seen as a solution (i.e. peening process). The verb prevents ties together the other semantic notions by indicating that the peening process is indeed a solution to this problem in this situation.

(12) Summary with Situation-Problem-Evaluation

Carpet salesman Owen Ryband found a way to beat the waiting list for a driving test.

(Titbits, 12 Jan 80, P33)

 This is the first sentence of a short article written for the general public. We are told of the situation (driving test),

the problem with the test (the waiting list) and the fact that Owen Ryband has found a way to beat it. This last piece of information evaluates something he has done as being a successful solution to the problem, but we have to wait for details of the solution in the main part of the article. The structure is Evaluation-Problem-Situation, a structure which used for rhetorical effect as it keeps the reader waiting for details of the solution.

(13)

A Solution-Problem Summary

An anti-booze doctor in every hospital is the latest attempt by French Health authorities to combat alcoholism.
(Cosmopolitan, Jan 80, P23)

This is the first paragraph of a short article, and it summarizes the information that follows in the next two paragraphs. The summary tells us that an attempted solution is to have an anti-booze doctor in every hospital, and the purpose of doing this is then seen to be to combat alcoholism which is seen as the problem. The solution is to fight the problem: note the parallelism of anti-booze and combat alcoholism. We know that this action by the French health authorities follows earlier failures to overcome the problem, a fact signalled to us by latest attempt, and we know the status of this solution as only in the trial stage through the use of attempt; use of solution would have implied that it works. Further details of the problem and effects are given later, and some detail of the latest attempted solution are also provided.

Evaluation

This analysis has shown that the categories of Situation-Problem-Solution-Evaluation provide some practical basis for understanding the structure, meaning and signalling of some very short texts. It has been possible to identify what information is present, and what information is not present, and we have been able to see why some types of information have not been included in the text.

Various patterns of communication have been noticed (e.g. Problem-Solution and Solution-Evaluation), and we can see that each pattern has its use depending on the purpose of the communication and the needs and knowledge of readers. These patterns can be communicated in separate statements, or they can be compressed within the grammar of a clause or sentence.

Many signals have been identified, especially for problem but also for solution and evaluation; we can also identify the signalling of situation although the signals for this are not so characteristic. We have also noticed that the meanings of all these signals must be taken in the context of the communication and considering the viewpoint of different readers -

poison is a problem for someone being poisoned, but is a solution to the poisoner.

There are many short texts which do not yield to analysis using these four categories, and further analysis of short texts using categories of 'Situation' and 'Situation-Evaluation' is necessary before we can be said to have developed a means of analyzing the prose structures of most short texts.

References

Hoey, M.P., "Signalling in Discourse", Discourse Analysis Monograph No. 6, University of Birmingham, England, 1979

Jordan, M.P., "Short Texts to Explain Problem-Solution Structures - and vice versa", Instructional Science, October 1980

Winter, E.O., "Fundamentals of Information Structure", Hatfield Polytechnic, Hertfordshire, England, mimeographed, 1976.

ON THE PHONOLOGICAL SIGNALLING OF TEXT STRUCTURE

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One of the most fruitful areas of linguistic interest in recent years has been the analysis of discourse. This has taken the form, on the one hand, of trying to establish the situational or textual categories underlying spoken interaction and, on the other hand, of a reexamination of traditional linguistic areas such as phonology and lexicogrammar in terms of their textual significance. In the present paper, I propose to review some recent work on the role of intonation in the creation of text and attempt to apply it to parts of an unscripted spoken interview in the light of some current theories of textual semantics. These theories are derived from recent work in the British linguistic tradition, particularly that of the Birmingham group of Brazil, Coulthard, Johns and Sinclair, and the work of Winter on the lexicogrammatical signalling of semantic relations in texts. After reviewing some ideas on the relationship between phonological and other kinds of signal, I will sketch some of the ways in which phonologically signalled meanings can be seen as combining with lexicogrammatically signalled meanings, to harmonize into the final composite meaning of the whole speech event.

I take the standpoint that phonologically signalled meaning is best treated as comparable to any other type of meaning, in other words, that it is not to be seen as mere attitudinal decoration added to a somehow more basic 'content' signalled by the grammar and vocabulary. As recent work has shown, one of the central functions of grammatical and lexical patterning is to signal textual meaning, by which I mean the meaning of an utterance which it acquires in its context, over and above the meanings associated with the elements of that utterance in isolation. I will be concentrating below on signals of how the speaker perceives the progress of the interaction, and of how parts of the message are related to other parts in terms of what is signalled as established fact and what is presented as being new information. It will be seen that such meanings are to be derived from both phonological and lexicogrammatical cues.

Before going on to look at intonation systems in detail, I want to make some observations on the predictability of intonation in texts. Although no one model has all the answers some proposals are more useful than others. Any attempt to predict features of intonation from the lexicogrammar of the isolated clause is doomed to failure. The most famous attempt was Chomsky & Halle's Nuclear Stress Rule (1968:17ff). Schmerling (1976:104) describes it

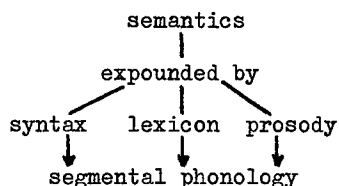
as based on claims that are "either false (for example, that the category membership of a given item is directly correlated with whether or not it is assigned stress), or vacuous (for example, that the heaviest stress in a particular syntactic constituent comes at the end except when it doesn't"). Strong words, but as we will see, amply borne out by the facts. Even less definite attempts to relate intonation to syntactic structures in isolation fail to fit the observed data. Ladefoged (1975:95) believes that in the kind "of rising intonation...which typically occurs in yes-no sentences, there is a large upward movement of pitch". He then goes on to talk of a lower rising movement which "usually occurs in the middle of sentences". Neither of these statements of frequency of occurrence fits the data I have recorded.

Linguists and phoneticians without a predisposition to give priority to syntax, and especially those who have gone in for detailed examination of texts, come to different conclusions. Fries (1964:251), following Pike's analysis, concluded after examination of a sample of American English texts that there seemed to be "no question intonation pattern as such" and, on the wider issue of predictability of phonological signals from syntactic facts, Bolinger (1958:32) calls encounters between grammar and intonation "casual, not causal". Although Bolinger's position is very tempting after trying to make sense of a particularly refractory text, it can not be accepted if it means that the relationship between phonology and other types of linguistic signal is coincidental. We still have to explain the impressive consensus we get when we ask informants to reconstruct the orthographic transcription of a real spoken dialogue. Moreover, there is some truth in the widespread belief that rising intonation is a common feature of questions. Not only is it to be found in echo questions and in making one word into a question, it appears in about half of all yes-no questions. What we need is a more differentiated statement than what we have had so far.

One way towards an answer is the recognition that the connection between phonology and lexicogrammar is not direct, but mediated by their common function of signalling meaning. While neither is dependent on the other, there is a high degree of mutual expectancy because the various cues are all involved in signalling one composite meaning in the whole utterance. The best approach to explaining how the different signals pattern is not to try to derive one from the other but to pay attention to the syntagmatic context of each kind of signal on its own level. That is to say that just as the structure of any given clause is constrained in its structure by its adjacent clauses, especially the preceding, so prosodic patterns are best approached initially on their own level. When patterns of intonation have been established for real spoken texts and tentatively related to appropriate meanings, it would then be appropriate to look more closely at areas of apparent divergence. A good example is clause connectors like and, but, because etc., which frequently get intonation focus in the tone unit containing the preceding clause, when a grammatical

analysis would assign them to the succeeding clause.

A very similar view to mine is that reproduced here from Crystal (1975:10).



If we look at this model from the point of view of the decoder of language, we can note that he has to process the acoustic continuum into abstract categories at the next level above. These then are the exponents of meaning. I am not fully convinced of the need for the segmental-suprasegmental distinction, deriving as it does from a descriptivist approach to language. From the point of view of how meanings are signalled, phonology is probably better viewed in terms of which choices trigger lexicogrammatical systems and which do not. Deliberate deviation from segmental norms, such as is involved in change of accent, is no rarity in speech and is directly meaningful in context without lexicogrammatical mediation, although the above diagram seems to preclude this. Nevertheless, the value of the above exposition is in its diagramming of the semantic mediation of the phonological and syntactic relation. More specifically, the lexicogrammar and prosody are related primarily through the meanings they signal. Just as lexical and grammatical cues paraphrase and harmonize with each other in expressing meanings like time reference or negation, so phonology and lexicogrammar combine to signal the status of the various parts of the information in the text.

In what follows I wish to look at phonological and lexicogrammatical overlap in signals of the kinds of meaning associated with the tripartite definition of the sentence proposed by Winter (this volume, & in press). Winter's sentence, while not ignoring grammar, is primarily a unit of textual meaning. Only the first part of the definition, that the sentence be grammatically and semantically complete, is lexicogrammatical at all and even this goes beyond the grammar of clause structure and brings in the larger semantic structures that Winter calls "Clause Relations" (Winter 1977). The second part of the definition depends on the sentence encoding part of the matter as known to the hearer and part as unknown. The third requirement is that the speaker takes responsibility for the truth of his proposition unless he specifically signals a more limited liability. There are obvious parallels here between intonational signals of reservation about the truth of part of a statement, between systems of information presentation and between incompleteness signals in speech. I wish to look at some of these phonological systems in more detail.

The requirement of grammatical and lexical completeness is to be seen in terms of the kind of sentences found in texts. Although they are not so common as example sentences in grammar books, we continually find in context sentences like There is only one thing for it and He would, wouldn't he?. The reason for this is that such sentences, while complete in their own terms require other sentences for their interpretation, and at the same time constrain us in our interpretation of these other sentences. The lexical item thing is 'unfulfilled' out of context, and cues the clause relation of Unspecific-Specific. This means that the speaker of the above sentence is putting himself under the constraint of specifying what exactly the thing for it is, probably in the next sentence. In dialogue, this mutual dependence of one sentence on the adjacent ones is even more important than in monologue, since here speakers are cooperating to produce the text together. They do this by sharing clause structure both in terms of completing each other's grammar and in fulfilling each other's unspecific lexical cues. We will look below at how speakers harmonize on the level of phonology.

It is interesting to note in passing the differences between the kind of dialogue I will be looking at and various types of deviant spoken interaction. One type is the overlapping monologues of small children, schizophrenics and even ordinary arguments where more than one speaker is competing for the floor. Their internal phonology and lexicogrammar is often regular but there is not enough connection with the other speaker. Another type of deviance is the speech of embarrassed people, often found at the start of taping sessions. As well as incompleteness such as unanswered questions, there is often a surprising number of grammatically complete and lexically fulfilled sentences of the kind you find in grammar books. This leads us to enquire how valuable the competence-performance distinction really is. Whatever its assets its main weakness has been to give spurious primacy to types of sentence that are in fact quite unusual in real speech in their full form. By concentrating scholarly attention on these 'ideal' sentences, it has caused vital aspects of real communication to be ignored. The distinction between anacoloutha and restructurings, on the one hand, and the kind of sharing of phonological and lexicogrammatical patterns that I am concerned with is an important one. Sharing creates text on a purely linguistic level. Most changes of direction in mid-pattern are detours triggered by the stream of simultaneous feedback emitted by the hearer. The fact that such real-life "messiness" seldom causes metalinguistic repair work is one piece of support for the argument that it is integrated into the text's own 'life-support systems' rather than extraneous interference caused by the imperfections of the speaker.

Seen from this point of view, human linguistic ability is less significantly reflected in our ability to produce an infinite number of trivially different sentences, than in the way we produce grammatically, lexically and phonologically appropriate structures within the tight constraints that adjacent structures,

including those produced by other speakers, impose on us. If we add to this the ability to override these constraints, including those we have set up ourselves when overall communication requires it, we can be even more impressed. We can only take part in dialogue because we know as well as our interlocutors what the constraints are on what may come next. The statement that the meaning of each sentence is a function of its adjacent sentences can be paraphrased from the encoder's point of view by saying that the amount and kind of choices available to him at any point in spoken interaction is a function of the preceding grammar and phonology and lexis.

Before going on to look at my examples of spoken English structure it will be necessary to define my terms. I propose to follow in the main the model described in Brazil, Coulthard & Johns (1980). This takes as environments for the semantic signalling systems we will be discussing the tone unit and the pitch sequence. The pitch sequence consists of a sequence of tone units. The tone unit itself has as the most important part for our present purposes, the tonic segment, which Brazil et al. (1980:39-40) describe as follows: "The tonic segment begins with the first prominent syllable, the onset, and ends with the last prominent syllable, the tonic." In a monosyllabic tone unit, onset and tonic and the systems of pitch height and pitch movement for which they act as carriers fall together, as we will see. Speech outside the tonic segment can be disregarded for the present.

The first system I want to discuss is called Tone, and is realized by the kind of pitch movement on the tonic. Brazil et al. (1980:14-15) follow Halliday (1970:7) in their description of the relevant movements but differ as to their meanings. Halliday had seen the primary distinction as being between falling and rising tone with their meanings being certainty or uncertainty about the polarity of the proposition. The most common English tone, fall, therefore signals that the speaker is confidently affirming or denying what he is saying. The second most common tone, the fall-rise, is seen as signalling a statement with reservations and Halliday, who sees predictability in the relationship of high rising tone to yes-no questions, sees them as vindicating his position by signalling uncertainty between yes and no.

Brazil, in contrast, sees the primary distinction between the two most common tones, and sees the function of Tone as marking the common ground the speakers share in terms of the particular speech event. More specifically, "the function of the fall-rise tone is to mark the experiential content of the tone unit, the matter, as part of the shared, already negotiated common ground occupied by the participants at a particular moment in an ongoing interaction. By contrast, falling tone marks the matter as new". The falling tone is called proclaiming(p) and the fall-rise is called referring(r). For each of these basic tones, there is a marked counterpart. The one that will concern us here is r+, which is realized by a rising tone, and is said to mark the information

of the tone unit as "matter which, while deemed to be present in the area of convergence, has need of reactivation" (Brazil et al. 1980: 53).

Space restrictions preclude a detailed discussion of the substantive differences between the above two models because the claims are clear enough to require testing on a large amount of data. What I do find intriguing, however, in Brazil's model is the way its basic dichotomy in Tone choice harmonizes so well with the 'given-new' distinction found throughout language. We have already seen it as Winter's second requirement of his sentence definition. The meaning of givenness is at the root of subordination of all kinds. Not only is clausal subordination a method of referring to rather than proclaiming the proposition of that clause, this same principle works all the way down the grammatical scale to the lexical item. If we compare the word interesting with its paraphrase Something interests someone, we note that the compulsorily deleted participants are being treated as automatically retrievable from the hearer's knowledge. In this context, we can note that referring tone is characteristically used on the expletive, you know as well as commuting with rising tone on many types of connectors like mind you, in fact, I mean to say etc. (Crystal & Davy 1975)

Brazil's major contribution to the discussion of discourse prosody is his work on the two pitch height systems of Key and Termination (Brazil et al. 1980: 60-72). Key, which is different from the system discussed in Monaghan 1979, is signalled by the pitch of the onset and Termination by the pitch of the tonic. In many cases, of course, there is only one prominent syllable and the two signals coalesce. Key signals the relationship of the whole tone unit to its predecessor in terms of the subject matter, while Termination signals the relation to the pitch sequence containing the unit. Termination can therefore be compared to the way preposed and postposed adverbial clauses function in connected texts to signal thematic development (Winter in press).

High key signals that the matter of its unit is in a Contrastive relation to the matter of the preceding unit. Mid key signals that it is Additive and low key that it is Equative. Each key choice shows how the speaker relates one piece or bundle of information to the preceding one. These key choices are independent of whether these pieces of information are proclaimed or referred to. Where the tone units coincide with whole clauses, the meanings signalled by the key choices are similar to clause relational systems and the meanings signalled by coordination, in and subordination, in that they indicate how the speaker sees one tone unit in relation to another. They are however not dependent on these other systems and can be modulated to produce subtle variations of meaning.

Termination is a system of the pitch sequence, which is the unit made up of a sequence of tone units ending on a low termination. A

low termination, therefore, by ending a pitch sequence signals that a topic has been closed. In addition, if it ends a speaker's utterance it inhibits the other participant in the interaction from adding a further contribution to that topic, and so it signals finality. Conversely, if the speaker's contribution ends on a mid or high termination, the incompleteness of the pitch unit puts the hearer under pressure to complete it even if the carrier of the following termination is a lexicogrammatically empty sound such as mmh. The parallels between the need to complete unterminated pitch sequences and the discussion above of the importance of the various types of lexicogrammatical incompleteness is striking. In addition, there are the constraints of pitch concord. When speaker change occurs, the second speaker is under pressure to open in the same key as the last speaker's termination. Taking pitch concord together with the necessity of a low termination to end the pitch sequence, we find that a high termination at the end of a speaker's utterance is very likely to produce a rejoinder. This certainly covers some of the cases of 'high rising' pitch in yes-no questions. Since the polarity in these questions is the only unknown factor by definition, the natural tone from Brazil's system would be referring, as it is in about half of the cases. Some of them have also a high termination, so that the pitch movement takes place towards the top of the voice range.

I would like now to look at two excerpts from an interview transcript, where the tone symbols are as explained above and all key and termination choices are mid unless otherwise stated.

- A. //r Did you manage to phone your father?//
 B. //p Yes./p That was the first thing I did.///
 A. //r Did he know?(high)//
 B. //p No./...//p I said I'd call the private number.///
 p and he answered./p and he was./r+ real surprised.
 (high)//
 A. //p He didn't come because./r he gets too nervous(low)
 /// is th..
 B. //p He gets real nervous///...

I have removed the parts indicated by dots because I want to concentrate on the move from one speaker to another. The referring tone in the first question reinforces the lexical cohesion of father with the preceding tone unit which was about B's mother. The second question gets referring tone since the point of phoning was to pass on good news. The high key/termination signals both incompleteness because an answer is expected and contrastiveness since if he had already known, the phone call would have lost some of its value. The r+ on the end of B's second response signals something like 'as I should have expected', with the high termination signalling contrast to the previous sequence and inviting comment. It is worth noting here that my glosses on the intonational meanings are necessarily inaccurate, indicating only broad outlines. If B had wanted to say that, she could have used her lexicogrammar just as I have used mine for the purpose.

After B's second response she laughs and A starts his next contribution in business-like additive mid key. His first tone unit proclaims the reason for B's father's nervousness. The next tone signals something like 'as we both know'. It is interesting to note here that having tonic stress on a connector is quite common in real texts and lays emphasis on the specific type of clause relation involved, rather than on any detail of the proposition. That this should happen comes as no surprise in the light of Winter's description of how grammatical and lexical signals of clause relations paraphrase each other (Winter 1977). The low key/termination choice in A's second tone unit here is governed by the low key system of Equative. The fact of his not coming and the known fact of his nervousness are presented as equivalent. After this there occurs a pause where B sizes up the possibility of this being a low termination signifying the end of the topic. A responds by starting a tone unit which he never completes because his grammar cues B who confirms the extent of her father's nervousness. There is then a short exchange which I omit and the interview culminates as follows.

- A. //r You gonna go on playing?(high)//
 B. //r Yeah(high)//
 A. //p Good.(low)//
 B. //p Yeah./p I'm not gonna quit(low)//

Here the opening high key of the first question signals that a new topic is beginning and that a response is expected. The r tone follows from the previous tone unit by B, which was about her career so far. Her first reply shows pitch concord while the r tone underlines the 'as expected' aspect of her affirmative. A's reply equates this with good, and terminates his sequence. B's last contribution repeats the lexicogrammar of her first response twice, but with stepping down key until her final low termination. This ends the interview. This phenomenon is also to be seen in the use of No. I'm not or Not really instead of plain No. The advantage of having more than one syllable in the reply is that there is the possibility of modulating one's own pitch signalled meanings. The first syllable can take on the high demanded of pitch concord if required, while the second tone unit has the option of a low termination with a meaning somewhere between 'that's final' and even 'so there'. The reader might like to try out the various tone and key/termination combinations for himself.

Much work remains to be done. My claims, however, are intended to be substantive enough to be proved or disproved on other texts. It is worth pointing out that I have some data which I cannot make work without special pleading and others which need a lot of contextualisation before being susceptible of a convincing explanation. I am not sure whether these problems are primarily due to weaknesses in the theory or to my application of it, or both, but it is perhaps worth noting that it is only after centuries of grammatical work that we are confidently able to identify grammatical mistakes. I

see no reason why there should not be prosodic mistakes comparable to lexicogrammatical slips of the tongue. Phonological description has just not advanced far enough for us to identify them.

My general conclusions are, firstly, that phonology, especially intonation, plays a greater role in our expression of meaning in texts than is generally recognised. This role involves the cuing of textual meanings in harmony with lexicogrammatical signals. It follows that there is no principled reason to treat phonologically signalled meanings of this sort as secondary to their lexicogrammatically signalled counterparts, unless we grant primacy to the idealised, contextless, written sentence in linguistics. If we do not, we find that the analysis of spoken, spontaneous discourse reveals richness of detail in the way language systems at all levels parallel each other. If the main aim of the competence-performance distinction was to concentrate our attention on one area of language, and the best researched one at that, so as not to get lost in a welter of detail, it is perhaps now time to collect all our insights about the idealized structure of the syntactic, lexical and phonological levels and apply them to a renewal of connection with the richness of communicative language use.

Footnote

I would like to thank the editors, especially Waldemar Gutwinski, for their forbearance, Eugene Winter for continual support and encouragement of this paper from conception to proof correction and Winifred Crombie and Colette Monaghan for proof reading and divers help. None of these are responsible for the errors that remain.

Bibliography

- Bolinger, D. (1958) "Intonation and Grammar" Language Learning 8. 31-7.
- Brazil, D., M. Coulthard & C. Johns (1980) Discourse Intonation and Language Teaching Longman, London.
- Chomsky, N. & M. Halle (1968) The Sound Pattern of English Harper & Row, New York.
- Crystal, D. (1975) The English Tone of Voice Edward Arnold, London.
- " & D. Davy (1975) Advanced Conversational English Longman, London.
- Fries, C. (1964) "On the Intonation of 'Es-No' Questions in English" in In Honour of Daniel Jones ed. Abercrombie, D. et al. Longman, Green & Co., London.
- Halliday, M. (1970) A Course in Spoken English: Intonation Oxford University Press, London.
- Ladefoged, P. (1975) A Course in Phonetics Harcourt, Brace, Jovanovich, New York.
- Monaghan, J. (1979) The Neo-Firthian Tradition Niemeyer, Tübingen.
- Schmerling, S. (1976) Aspects of English Sentence Stress University of Texas Press, Austin.
- Winter, E. (1977) "A Clause-Relational Approach to English Texts" Instructional Science 6.1. Special Issue. 1-93.

- Winter, E. (this volume) "On a Contextual Definition of Sentence"
Paper presented at the Eighth LACUS Forum, 1981.
" (in press) Towards a Contextual Grammar of English
George Allen & Unwin, London.

TEXTUAL MEANING IN TROLLOPE'S BARCHESTER TOWERS:
THE FOREGROUNDING OF ADVERSATIVE CONJUNCTIONS

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"Of all the applications of linguistics, that to the study of literature is potentially the most challenging and the most fruitful" wrote Ruqaiya Hasan in 1975. For the most part, she contended, the potential of such applications has not been realized: "The contrast between what might have been and what is, is indeed striking: to date, stylistics remains a subject that has made no significant impact upon what goes on in literary studies or in theoretical linguistics" (Hasan, 1975: 49). What stylistics must do, of course, is to speak more directly and convincingly to literary critics. Tables and statistics have and will continue to have their important place in stylistic analysis, but these are no substitute for clear and powerful statements about literary meaning - statements which are powerful and clear because they are informed by a coherent theory of language.

Moreover, such statements should be clear because of their scientific nature. They should not depend either on the whim of the critic or the latest wrinkle in critical fashion; rather they should be so solidly grounded on a clear theoretical base that other critics can test the reliability of the stylistic analysis by applying the same principles to similar texts. As important as experimental replication, however, is the matter of interest. Stylistic analysis must say something interesting about the meaning of a text if it is to appeal to an audience of literary critics. Trollope's Barchester Towers provides a good test case for a limited study which we believe to be both replicable and interesting to literary critics.

The foregrounding of adversative conjunctions is an important, perhaps even defining, feature of textual meaning in Barchester Towers. The adversative conjunctions are there, and they can be counted, but what do they mean? Essentially, they are signals to the reader that the text of the novel must be processed in a particular way, which turns out to be congruent with the intuitive perceptions of many readers and critics and indeed congruent with the plot itself. In other words, textual meaning "enables" ideational meaning, or content, to be clearly perceived in the sentence by sentence structuring of the novel.

Trollope's style has always been of interest to critics, but their observations have usually remained quite general. A recent critical "breakthrough", for example, has been the discovery that Trollope's "lack" of style is a virtue rather than a defect: "style is seen by Trollope, then, as a means for creating an illusion,

particularly the illusion that there is no style. Language does not so much create as serve; in *The Duke's Children* style is spoken of as a mere 'vehicle' for the important wares" (Kincaid, 1977: 49). Ruth apRoberts shares this insight, but is equally interested in detail, the particulars that stylistics is prepared to deal with. She is summarizing and commenting on Hugh Sykes Davies' discussion of the structure of adversatives in Trollope's novels generally: this structure "works for qualifications, or exception to a generality; it lays bare perplexities of motive in conflict, or unconscious motive; it reveals indecision; it contrasts a man's estimate of himself with our estimate; and, finally, it points the discrepancy between theory and practice. It seems to me that if grammatical analysis can tell all this about Trollope, we could do with more of it" (apRoberts, 1971: 25). Davies, himself, does not discuss Barchester Towers at all, but cites passages from a wide range of Trollope's fiction which have a "recurring cadence" resulting from the deployment of adversative conjunctions (Davies, 1960: 76).

For Halliday and Hasan (1976: 227), conjunctions differ from other cohesive relations (reference, substitution and ellipsis), all of which signal the addressee to search elsewhere for meaning or structure; conjunction specifies "a different type of semantic relation." It is not an instruction to search, but rather "a specification of the way in which what is to follow is systematically connected to what has gone before." Halliday and Hasan (1976: 250) categorize conjunctions as additive, adversative, causal and temporal, and it is of course the second type that primarily concerns us here. "The basic meaning of the ADVERSATIVE relation", they maintain, "is 'contrary to expectation'."

Since conjunctive relations "represent semantic links between the elements that are constitutive of text" (Halliday and Hasan, 1976: 321), they will be powerful indicators of an author's central purposes. In Barchester Towers, conflict, that is adversarial relations in institutionalized life, is the driving force of the story. Kincaid (1977: 103) puts it succinctly: "The organizing thematic principle in the novel is the notion of the fight. On all levels - clerical, academic, journalistic, and personal - the central issues involve a struggle for power. The book asks such questions as who shall be warden? - who shall be dean? - who will replace Mr. Bold with Eleanor? These and equivalent questions involving values are given one answer: he who does not try. The real winners are those who do not fight. At the heart of the book is a profound protest against the competitive mode of life, and Barchester Towers thus establishes its comedy in direct hostility to the major progressive movements of the period: democracy and capitalism. But the issue goes deeper than this; the whole notion of power is relentlessly attacked." Kincaid's own lexis ("fight", "struggle", "power", "fight", "protest", "competitive", "hostility", "power", "attacked") captures the spirit and the letter of the novel very well.

Let us begin by looking at some typical instances which establish

conflict in the sense of "contrary to expectation." In the very first chapter, Dr. Grantly's expectation that he will succeed his father as Bishop is frustrated by the appointment of Dr. Proudie. By Chapter VI, entitled "War", the battle lines between the new Bishop's deputy, Mr. Slope, and Dr. Grantly on questions of both doctrinal style and substance are clearly realized in a "military combat" lexical set:

Could he have ignored the chaplain, and have fought the bishop, there would have been, at any rate, nothing degrading in such a contest. Let the Queen make whom she would bishop of Barchester; a man, or even an ape, when once a bishop, would be a respectable adversary, if he would but fight, himself. But what was such a person as Dr. Grantly to do, when such another person as Mr. Slope was put forward as his antagonist? If he, our archdeacon, refused the combat, Mr. Slope would walk triumphant over the field, and have the diocese of Barchester under his heel. (VI, 43)¹

What is highlighted by the adversative conjunction here ("but") are the two horns of Dr. Grantly's dilemma. A fight against the principles held by Mr. Slope is necessary, but an engagement against such a person is demeaning, and so the only process available for averting disaster would seem inevitably to bring it on. The expectation that the principal spokesman of the objectionable new doctrine would be a "worthy" person to debate with is, of course, already cast in doubt by the theme-marked conditional circumstance: "Could he have ignored the chaplain..." What the adversative conjunction does is to emphasize the sense of contrary to expectation which is already present in the chapter. The "but" does not bring in Dr. Grantly's problem as a surprise; rather it focuses the reader's processing of the text: here, in a nutshell, is the unexpected development the Archdeacon can not cope with.

In Mr. Slope's first sermon preached as the Bishop's chaplain in the cathedral, Dr. Grantly's worst fears are realized: in the name of reform, long established devotional practices will be done away with, and new ones substituted. At this point in the novel, it is fair to say that the sympathies of the reader are enlisted on the anti-Slope side, and this is what gives so much force of "contrary to expectation" to the "yet" at the end of paragraph which follows:

Yes! all Barchester was in a tumult. It was not only the clergy who were affected. The laity also had listened to Mr. Slope's new doctrine, all with surprise,

¹ All quotations are from the Worlds Classic edition of Barchester Towers.

some with indignation, and some with a mixed feeling, in which dislike of the preacher was not so strongly blended. The old bishop and his chaplains, the dean and his canons and minor canons, the old choir, and especially Mr. Harding who was at the head of it, had all been popular in Barchester. They had spent their money and done good; the poor had not been ground down; the clergy in society had neither been overbearing nor austere; and the whole repute of the city was due to its ecclesiastical importance. Yet there were those who heard Mr. Slope with satisfaction. (VII, 55)

Nothing could come as a greater surprise, and yet this ability of Mr. Slope to attract support leads directly to even greater, increasingly intense and prolonged conflict: between Mr. Grantly and Eleanor Bold, between Eleanor and her father Mr. Harding, and between Eleanor and her future husband, Mr. Arabin.

Another way in which Trollope emphasizes the tension and conflict leading up to an adversative is by lexico-grammatical parallelism. In the paragraph which follows, from the chapter "A Love Scene", Mr. Slope is unable to resist the manipulative power of Signora Neroni:

But Mr. Slope could not help himself. He knew that he was wrong in devoting his time to the back drawing-room in Dr. Stanhope's house. He knew that what took place there would if divulged utterly ruin him with Mrs. Bold. He knew that scandal would soon come upon his heels and spread abroad among the black coats of Barchester some tidings, exaggerated tidings, of the sighs which he poured into the lady's ears. He knew that he was acting against the recognised principles of his life, against those laws of conduct by which he hoped to achieve much higher success. But as we have said, he could not help himself. Passion, for the first time in his life, passion was too strong for him. (XXVII, 270)

The lexical context of the mental processing verb "knew" is very important in a novel in which so much turns on conflicts which are part of decision making, and which dwells on the "mental turmoil" of the characters who are embroiled in these conflicts (XXXII, 45). In "Another Love Scene" a lexico-grammatical parallelism turning on "mental turmoil" and leading to an adversative is sustained through three contiguous paragraphs involving Mr. Arabin, Eleanor Bold, and Mr. Harding. Mr. Arabin experiences mental conflict in trying to decide whether or not Eleanor will marry Mr. Slope:

He thought how often he had laid down the law to her, and how sweetly she had borne with his somewhat dictatorial decrees. He remembered her listening intel-

ligence, her gentle but quick replies, her interest in all that concerned the church, in all that concerned him; and then he struck his riding whip against the window sill and declared to himself that it was impossible that Eleanor Bold should marry Mr. Slope. And yet he did not really believe, as he should have done, that it was impossible. He should have known her well enough to feel that it was truly impossible. He should have been aware that Eleanor had that within her which would surely protect her from such degradation. But he, like so many others, was deficient in confidence in women. (XXX, 27)

For her part, Eleanor has been unsuccessful in convincing Dr. Grantly that she is not receptive to Mr. Slope's advances, and she, too, is distressed:

Eleanor had not passed a pleasant morning. She was irritated with every one, and not least with herself. She felt that she had been hardly used, but she felt also that she had not played her own cards well. She should have held herself so far above suspicion as to have received her sister's innuendoes and the archdeacon's lecture with indifference. She had not done this, but had shown herself angry and sore, and was now ashamed of her own petulance, and yet unable to discontinue it. (XXX, 28).

Finally Mr. Harding as well suffers from the anxiety of not being able to say what he thinks:

It was a hard task for him to reconcile himself to the idea of seeing her at the head of Mr. Slope's table; but he got through it.... He longed to tell her how he had determined to prefer her to all the world, how he was prepared to admit that she was not wrong, how thoroughly he differed from Dr. Grantly; but he could not bring himself to mention Mr. Slope's name. (XXX, 28)

Much later in the novel, when Mr. Harding comes in to tell Dr. Grantly the news that he and not Mr. Slope has been invited to become the new Dean, Trollope foregrounds adversatives for comic effect. The first big surprise is the news itself. It is that Mr. Harding has been made Dean, not the expected announcement that Eleanor has eloped with Mr. Slope:

"Has Eleanor gone off?"

"No, she has not," said Mr. Harding, with a look of great displeasure.

"Has Slope been made dean?"

"No, he has not; but --"

"But what?" said the archdeacon, who was becoming

very impatient.

"They have --"

"They have what?" said the archdeacon.

"They have offered it to me", said Mr. Harding.

(XLVII, 221)

The next big surprise is that Mr. Harding will not accept the offer. Dr. Grantly and his wife wax so enthusiastic that Mr. Harding can't get a word in edgewise:

"But --" began Mr. Harding.

"But me no buts," said the archdeacon.

"I was never so happy in my life...."

"But, my dear," said Mr. Harding. --It was all in vain that he strove to speak; nobody would listen to him. (XLVII, 222)

In this case the adversative relationship is sustained for ten paragraphs; the "but" is held in abeyance until Mr. Harding is at last able to finish his text: "But, all the same, I am afraid that I can't accept it" (XLVII, 223). Having at last confronted Dr. Grantly's expectations, Mr. Harding succinctly articulates the contrast (which lends support to Kincaid's pacifist interpretation of the novel) between them: "I may wish that I had your spirit and energy and power of combating; but I have not. Every day that is added to my life increases my desire for peace and rest." (XLVII, 224)

The adversative foregrounding continues in Chapter XLIX (241), in which Mr. Harding attempts to tell Eleanor his news that he has been offered the deanship, but plans to refuse it, while at the same time she tries to tell him the news that Mr. Arabin has proposed to her, and that she has accepted:

"But, my dear, I think it best to refuse it..."

"But, papa, I must tell you about myself..."

"But I fear you won't. I do so fear you won't.

And yet you can't but think I am the most fortunate woman living on God's earth...."

"But will you love him, papa?"

The news of Eleanor's marriage to Mr. Arabin so confounds Dr. Grantly, when Mr. Harding tells him, that he cannot express himself in adversative structures, but is compelled to deny the fact:

It was quite clear to see, by the archdeacon's face, that he did not believe a word of it.

"Mr. Arabin! It's impossible!"

"Eleanor, at any rate, has just now told me so."

"It's impossible", repeated the archdeacon.

"Well, I can't say I think it impossible.

It certainly took me by surprise; but that does not make it impossible."

"She must be mistaken." (L, 245-6)

(Harding, unlike Dr. Grantly, remains within the adversative framework.)

In Barchester Towers, the characters are frequently tied up in knots, fighting institutional battles, enduring mental or emotional strife of one sort or another, being frustrated by false expectations, cross purposes, lack of knowledge and the like. The appointment of Mr. Quiverful as Warden of Hiram's Hospital is no exception to this pattern; throughout the novel it has been an on again off again affair. When the appointment is finally made, and Mrs. Proudie gets her way, it is as if a log jam has been broken, and this is reflected in the grammar: additive rather than adversative conjunctions are foregrounded. Consider the initial sentences of the following four paragraphs:

And then the pair sitting down lovingly together...

And 'the fourteen' - or such of them as were old enough to hope and discuss their hopes, talked over their golden future....

And the younger fry, they did not content themselves with whispers....

And the last in all Barchester to mar their hopes, had he heard and seen all that passed at Puddingdale that day, would have been Mr. Harding. (XLIII, 175-6)

Additive conjunction is sustained throughout the twenty paragraphs of this portion of the text, which concludes with the following one sentence paragraph: "And so we will leave her happy in her toils."

In the same chapter, there is a similar, sudden shift of style in The Jupiter's leading article, when it moves from a review of the ecclesiastical affairs of Barchester to a concluding paragraph promoting Mr. Slope as the new Dean. In this case it is not the absence of adversative conjunction which marks the passage; it is a total absence of conjunction. For The Jupiter, there are no "ifs", "ands" or "buts" about Mr. Slope:

We hear that Mr. Slope's name has been mentioned for this preferment. Mr. Slope is at present chaplain to the bishop. A better man could hardly be selected. He is a man of talent, young, active, and conversant with the affairs of the cathedral; he is moreover, we conscientiously believe, a truly pious clergyman. We know that his services in the city of Barchester have been highly appreciated. He is an eloquent preacher and a ripe scholar. Such a selection as this would go far to raise the confidence of the public in the present administration of church patronage, and would teach men to believe that from henceforth the establishment of our church will not afford easy couches to

worn-out clerical voluptuaries. (L, 185-6)

Mr. Arabin's proposal of marriage to Eleanor, so frustratingly delayed by so many obstacles and misunderstandings, and her ready acceptance also resolve a long standing source of tension, and at this moment of resolution we find Trollope's familiar use of lexico-grammatical parallelism, but the adversative climax is missing. As well, the sparing use of additive conjunctions gives the passage a kind of Longinian rapidity and transport (the figure of speech called asyn-deton):

"Oh, let me go," said she; "let me go now. I am too happy to remain, --let me go, that I may be alone." He did not try to hinder her; he did not repeat the kiss; he did not press another on her lips. He might have done so had he been so minded. She was now all his own. He took his arm from round her waist, his arm that was trembling with a new delight, and let her go. She fled like a roe to her own chamber, and then, having turned the bolt, she enjoyed the full luxury of her love. She idolised, almost worshipped this man who had so meekly begged her pardon. And he was now her own. (XLVIII, 235-6)

In order to make sense of this novel from the textual point of view the reader must constantly accept the specification that segments of the text are connected to what has gone before through the relationship of adversity. Conjunction, as a cohesive device with powerful semantic status, clearly indicates the key role that antithesis plays in Barchester Towers. Through sudden shifts in patterning at key points, conjunction throws moments of resolution into sharp relief: the final determining of Mr. Quiverfull's position; the Jupiter's endorsement of Mr. Slope, and Eleanor's acceptance of Mr. Arabin's proposal. If we cannot assert conclusively that Trollope sees the world in adversative terms, we can say that it is the way he encodes his experience of the world for presentation to the reader. In this respect, then, style and meaning are inseparable. Trollope's art is powerful, taking us "into the centre of life, obliging us to recognise incongruities, forcing the appreciation of the dilemma" (ap Roberts: 1971, 54).

References

- Davies, Hugh Sykes. "Trollope and His Style". Review of English Literature, I, 1960, 73-85.
- Halliday Michael, and Ruqaiya Hasan. Cohesion in English. London: Longman, 1976.
- Hasan, Ruqaiya. "The place of stylistics in the study of verbal art" in Ringbom, ed., Style and Text. Stockholm: Sprakforlaget Skriptor and Abo Akademi, 1975.
- Kincaid, James R. The Novels of Anthony Trollope. Oxford: Clarendon Press, 1977.
- ap Roberts, Ruth. The Moral Trollope. Athens: Ohio University Press, 1971.
- Trollope, Anthony. Barchester Towers, ed. Michael Sadlier and Frederick Page. Oxford: Oxford University Press, 1980.

ON THE CONCEPT OF 'VERBAL WORK'

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'Verbal work' is a concept similar to those of 'text' and 'discourse': it, too, refers to language as used at and above the sentence level. There are, however, good reasons for introducing it.

One of the problems with the term 'text' is well known: the word may mean a great many different things. For some, to give just one example, 'text' is a term like 'utterance,' that is, it denotes something concrete; for others, 'text' is a term like 'sentence' or even 'system sentence,' that is, it denotes a theoretical construct, something abstract(cf.van Dijk 1980:3).

There are also other striking inconsistencies in the use of the term. Lyons, for instance, writes: "We will employ the term text for any connected passage of discourse, whether it is spoken or written and whether it is a conversation or a monologue."(Lyons 1977: 30) At another point he says: "Texts, as the term 'text' is normally understood, are the product of more or less conscious and controlled literary composition. They have a determinate beginning and end and some kind of internal coherence or unity. Most of our everyday conversation, however, is not made up of texts in this sense. It is arguable, therefore, that the notion of the coherent, or well-formed, text, useful though it may be in literary stylistics, is not generalizable to the most typical and most basic kind of language behavior. In this sense of the term, the relevant question is not "Is this a text?" which carries with it presuppositions of internal organic unity and determinate external boundaries, but 'Does this constitute text (rather than non-text)?'"(Lyons 1977:631).

The distinction between 'a text' and 'text' poses another problem, one that is much less frequently mentioned: 'text,' just as 'discourse,' is too general a term. Many linguists, for instance, use 'a text' and 'text' concurrently. We can read in Halliday/Hasan: "The word TEXT is used in linguistics to refer to any passage, spoken or written, of whatever length, that does form a unified whole."(1976:1) "Any piece of language that is operational, functioning as a unity in some context of situation, constitutes a text. . . Text may be of any length." And they speak of what is and what is not "necessary for the creation of text." (1976:293) This is a good enough example that the distinction drawn by Lyons between 'a text,' meaning 'lit-

erary composition,' and 'text,' meaning everyday language behavior,' is not maintained by all linguists. The example also shows that Halliday/Hasan approach 'a text' from the point of view of 'text'; they are interested in the production of text and ignore that meaningful sequences of language above the sentence level may well be text, but not at all necessarily 'a text.' A conversation is turned into 'a text' by the investigator who delimits it and inserts it in some study or interpretation. But even then, the conversation is not a 'work.' And this is the point to be borne in mind: 'verbal work' is a concept narrower than 'text.'

Verbal work, logergon, is a term denoting delimited and repeatable language units made according to various explicit or implicit generic rules. Intentional delimitation and potential repeatability characterize them as 'work.'

Verbal work, logergon, is a term much broader in application than 'literary work,' however far the meaning of 'literary' might be stretched. It encompasses every possible kind of delimited and repeatable verbal products that exist in language. At the same time, the term is narrower than that of 'discourse' or 'text' which as a rule refer to every stretch of coherent language as and above the sentence level, including everyday communication. While every verbal work is 'discourse' or 'text,' not every discourse or text is a verbal work. Making a speech is different from making conversation. 'Making conversation,' like 'making love,' is a generic activity that does not produce generic units: we cannot speak of 'making a conversation' or of 'making a love.'

Verbal works, logerga, are works in and of language: language is not only their medium but also their immediate environment. In this respect, verbal works differ from all other kinds of works, for instance, from pottery whose immediate environment is not clay but household. To put it differently, verbal works are not only made of language, they are also made into language: they become part of the medium of which they were made. This characteristic of language may be called self-extension; it is as basic to language as is reflexivity, that is, our ability to speak with language about language.

Any given language consists not only of a phonetic system, a grammar, and a lexicon, but also of the galaxy of verbal works that have been produced and still are extant in it.

Verbal works are not speech acts. Text linguists and discourse analysts often ignore that the speech act

theory, as put forward by Searle, does not extend beyond the sentence level and explicitly excludes, for instance, all 'non-serious' speech.

Speech acts are frames, verbal works are complete, insertable, hence, removable, units. To accommodate them with speech act theory, one could say that verbal works function like direct quotations (*oratio recta*). A logergon, therefore, is capable of insertion in the wrong frame, as when The Merchant of Venice is played as a tragedy, the Bible is read as literature, a historical novel is read as historiography. The inadequacy of the frame, of the speech act in which a verbal work is inserted, as a rule can be easily established, since the generic intention with which verbal works are made is usually known: it is often stated in the work or its immediate verbal context. To insert a verbal work into a wrong frame is, of course, not necessarily a wrong thing to do.

Verbal work, logergon, is a term designating a concept of concrete, hence, extant phenomena.

No new kinds of verbal works can be predicted on the basis of extant ones, as no new species can be predicted in zoology. General theories of production can never explain the emergence of a new kind in its specificity, just as evolutionary theory cannot predict possible species.

No phonetic and grammatical rules can bridge the gap between the sentence level and the level of verbal works, just as no rules lead from physics, or even organic chemistry, to zoology. Whether or not the rules specifying verbal works are linguistic, extralinguistic, or both, depends on how these terms are defined. But if they are linguistic - to use this word as an adjective belonging to the noun language - the linguistic rules pertaining to verbal works must be discontinuous with the linguistic rules pertaining to sentences. Whether or not a text-grammar is conceivable or not need not be considered here. A grammar of verbal works would be a patently nonsensical proposition. Verbal works do seem lexical rather than grammatical in nature, but in fact they are a third kind of phenomena.

Verbal works are, in spite of the reference above to the zoological model, not organic in nature (and not inorganic either): they are sui generis. Even if Jakobson's cautious hypothesis about an isomorphism between genetic and linguistic encoding could prove correct one day, this isomorphism would be irrelevant for verbal works, just as the genetic system is irrelevant for the understanding of social and cultural patterns. The discontinuity of the mental-psychic realm with the organic is as radical, and, perhaps, no

more radical, as the discontinuity of the organic with the inorganic, or so it must be postulated for the time being.

Verbal works are aggregative-systematic units. Aggregates do not differ from systems by being heaps: they, too, can be ordered. The difference amounts to this: the order imposed on the material in aggregates is not isomorphic with the order within the material itself. A heap of bricks and bricks laid in columns are equally aggregates. Any given crystal formation is systematic as to the shape of the crystalline form which characterizes the mineral in question, but it is aggregative as to the size and the actual shape of the given formation. Aggregates can be highly valued, as the case of diamonds attests.

The hypothesis that verbal works are aggregative-systematic units means that they are of such a constitution that not all their parts have unequivocally traceable and fixed functions; some parts are indeterminate, free-floating.

This hypothesis is proposed as an alternative to the hypothesis that verbal works, often called text or discourse, are fully systematic, fully structured wholes which, accordingly, allow a necessary and sufficient tracing, or re-tracing, of every part to the whole.

The systematic hypothesis has two basic kinds, the logical positivist and the hermeneutic. The former stipulates a whole which is much too definite, it allows complete interpretation. The latter is much too open: the whole is considered fully ordered but inexhaustible--timeless or in constant transformation in an incessantly receding horizon.

The aggregative-systematic hypothesis postulates that any given verbal work, logergon, is a complex of semantically charged verbal units, each complex consisting of systematically related parts as well as of parts which are aggregatively added to support, to embellish, to modify, to encumber, or to counteract the system with which they cohabit the work.

The role of the systematic parts as a rule can be made out by consensus; the role of the aggregative parts, by contrast, usually cannot be assessed unambiguously. The different readings of a given verbal work may be understood as resulting, among others, from the circumstance that indeterminate parts can be associated with the systematic ones in various ways, activating different aspects of the systematic parts or of the systematic whole itself.

I should like to give four examples.

The first example is that of any picaresque novel

in which individual adventures, episodes without a central story, make up the main body of the work. There could be more or less of them, that is, we can imagine them that way. The role of the aggregative parts may be sheer entertainment; they may also serve the purpose of overwhelming the audience, suggesting to them that life on earth is a sequence of colorful nonsense. In both cases, there could be more or fewer parts; the role of most parts is contingent.

Another example reads: "NIVEA moisturizing lotion. A little NIVEA each day will keep skin soft, smooth, healthy looking. NIVEA lotion is a general purpose moisturizer. Ideal for hand and body use. Suitable for use on face, too. Has a light, clean fragrance." There is no need to go into details here. It is obvious that this logergon has some repetitive parts. Repetition may serve a purpose, and the purpose may be complex. One purpose, in this case, is specifying the use of the lotion, another purpose, possibly, is inducing users to use more of it. There can be no question about the fact that this verbal work speaks of a skin lotion which should be used every day, and which smells good. But, I think, it is a matter of controversy whether the sequence "Ideal for hand and body use. Suitable for use on face, too." means that the lotion is not ideal for use on face, or it wants to give a separate emphasis to "use on face," and so on.

A third example is a poem by Blake, "A Poison Tree." An analysis may turn on the point that we have here an opposition of friend and foe, and that by the end of the poem the foe is disposed of, not the wrath. I think this is, partly, true. A literary critic may point out, of course, that wrath is transformed into gladness, i.e., that gladness is, in this case, disguised, latent, wrath. The literary critic most certainly would try to do something with the fact that the tree in question grows apples, not pears, and that it is in a garden. But of course you do not have to be a literary critic to do this, and, consequently, to ask how and why is, possibly, the biblical imagery grafted on the poem, that is, on its systematically indisputable parts. One can continue by asking about the "I" of the persona speaking in the poem; whether it is Blake's "Nobodaddy," the God of the princes and the priests, or of somebody believing in such a God, or of any human being governed by natural inclination, etc. I would say that the entire metaphorical dimension, or displacement, of the poem is aggregative, and that it is not only necessary to this verbal work, it belongs to its fascinating aspects.

Finally, I should like to mention a single word

verbal work. I must apologize for bringing a non-English example. The author is Woeres, a Hungarian poet; the work is: "Tojasej." "Tojas" means 'egg,' "ej" means 'night.' But there is a Hungarian word "hej" which means 'shell,' and another one "Tojashej" which means 'egg-shell.' By dropping the sound/letter 'h' from "hej," 'shell,' the poet produced, not a new word, but a new work which suggests, perhaps, the pregnant darkness that is inside an uncracked egg. Here the very same parts are systematic and aggregative at the same time, as is the case in all puns.

Verbal works are capable of holding aggregative parts because they can afford it. Atoms have the least amount of freedom, organisms have more, and verbal works have considerably more than organisms. For the extancy of verbal works does not depend primarily on internal, organization economy. Their extancy--the equivalent of biological survival--is due to the fact that they are known as accomplished works, that is, that they have merit as delimited units. Their extancy, in other words, is due to the material presence of their sign vehicles and to an actively protective cultural environment.

Verbal works can safeguard their extancy by means of delimited and virtually fixed complexes of materially given sign vehicles. The thesis so expressed needs to be improved, of course. For verbal works cannot 'safeguard their own extancy;' they cannot do anything at all. The thesis should be so phrased: As long as a materially given sign vehicle of any verbal work is extant, the verbal work associated with it is principally secured against disintegration and disappearance. Its practical extancy requires in addition actualization, a process which includes decoding.

The extancy of any given verbal work is due, strictly speaking, also to sheer chance and sheer necessity. To sheer chance, in so far as every single copy of the materially given sign vehicle of a given verbal work may be destroyed; and to sheer necessity, the existence of human beings with approximately reliable capabilities of verbal communication.

The identity of given verbal works is secured by delimited and materially given sign vehicles which never are sheer matter, but always matter formed.

'Verbal work,' logergon, is a term referring to a purely heuristic concept, not to a single discontinuous entity or phenomenon.

What we in fact have is, on the one hand, a materially given sign vehicle - usually a form-identical copy of an original materially given sign vehicle - and, on the other hand, manifestations produced by means of

such a sign vehicle.

The form of the materially given sign vehicles is not arbitrary. Saussure's thesis of the arbitrariness of the sign vehicles cannot be carried over, from the level of phonemics, to the level of verbal works. At this level a similar kind of contextual non-arbitrariness obtains as suggested by Beneveniste for the level, and the sphere, of lexical denotation in any given language.

The process of producing manifestations might be called 'actualization.' This term, however, is not really adequate, for the sign vehicle is actual before the process, and only a single manifestation is, or rather was, actual by the end of it. The process is better called 'transposition.' In the course of transposition, a materially given sign vehicle is being changed into a manifestation of the verbal work in question.

We can make generalizations on the basis of one or more manifestations of the same work, that is, of manifestations belonging to the same (form-identical) material sign vehicle.

'The' work is nowhere given, not even in the maker. It was not given before completion of the original material sign vehicle, and once it has been completed the maker, too, can only produce manifestations from it. 'The work' only exists in its manifestations. It cannot be identified, therefore, with any given manifestation absolutely.

The study of verbal works, logergology, can only be directed at extant works.

One of the aims of logergology must be the production of a taxonomy of verbal works. Such a taxonomy should be conceived in terms of zoological taxonomy, as distinct from linguistic taxonomies currently in use, which in fact are typologies. Logergological taxonomy differs from text-linguistical typologies by trying to accommodate actual groups of verbal works still extant in language.

Textlinguistics and discourse analysis are theoretical disciplines: they investigate a) possible production, not actual products, and b) they make no distinction between speaking and speech, or speech and a speech respectively. They investigate that which is speech in a speech, a type of discourse in a discourse. The research program of logergology, like that of lexicography, by contrast, is practical rather than theoretical. It maps the area rather than explains its coming about.

The study of verbal works, therefore, does not replace the study of discourse or text, that is, of language in general above the sentence level.

Linguistics, meaning 'the study of language,' should be extended to include the study of verbal works or else the study of language should include, next to linguistics, also logergology (as the study of life includes, next to theoretical biology, also zoology, botany, and bacterology).

REFERENCES

- Teun A. van Dijk, Text and Context. Explorations in the Semantics and Pragmatics of Discourse. London:Longman 1980.
- M.A.K.Halliday/Ruqaiya Hasan, Cohesion in English. London:Longman 1976.
- John Lyons, Semantics. Cambridge/London/New York/Melbourne:Cambridge University Press 1977.

THE ROLE OF THE NOUN-PRONOUN ALTERNATION IN PARAGRAPHING

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The results of a study by Koen, Becker, and Young (1969:51) showed that paragraphing signals are not entirely semantic, but are also formal. Prose passages and nonsense paralogues were presented to experimental subjects, who were to mark off paragraph boundaries (such a boundary to be denoted below as '¶'). In three of eleven passages, ¶ cues were almost entirely formal.

There is evidence that the noun-pronoun (N-Pron) alternation can at least sometimes serve as such a formal cue. See Hinds (1977:78): 'the presence of a pronoun or a full noun phrase in those instances in which either appears to be permissible signals a difference in the structural organization of the paragraph.' See also Bolinger's (1977) 'Pronouns and repeated nouns' for a discussion of other possible discourse-level functions of the N-Pron alternation.

The experiment in the current study tests the effect of the N-Pron alternation on ¶.

Such a study is of interest for its own sake, but is of special interest to me for another reason as well. There is also evidence that the selection of active vs. passive can provide ¶ cues. This possible function of the active-passive dichotomy is the topic of one chapter of my Ph.D. thesis, currently in progress. Briefly, Padučeva (1974) has observed constraints on head NP's of sentences in connected discourse. An inference to be drawn from her observations is that 'movement rules' affecting the choice of head NP can simultaneously affect ¶. Some directly supporting evidence is seen in Morton (1966). He suggests that sentences (1) and (2) each comprise perfectly natural two-sentence discourses.

- (1) I saw a house. The house was built by a man.
- (2) I saw a man. The man built a house.
- (3) I saw a house. A man built the house.
- (4) I saw a man. A house was built by the man.

Sentence pairs (3) and (4), however,--in the words of Clark and Clark (1968)--'both seem somewhat odd.' A hypothesis of my thesis is that if (3) and (4) 'seem somewhat odd' it is because each contains a ¶, which is very odd in a two-sentence discourse. The cue is the violation of Padučeva's constraints on head noun phrases. The selection of active or passive in the second sentence in each case, because it affects the choice of head noun phrase, can give a ¶ cue or withhold one. In order to test this empirically, a set of texts was constructed to be segmented by experimental subjects. The experiment was designed to show whether the active-passive

dichotomy could give a π cue. Consider (5)-(8). Pairs (5)-(7) seem less highly marked than (1)-(3). But, (8), with a pronominal *by*-phrase, appears very highly marked. This asymmetry in N-Pron alternation is a confounding factor if the least highly marked (i.e. 'most natural') version of each possible text is selected. Thus, the current study attempts to uncover any such confounding effect of the asymmetry of the N-Pron alternation in paired texts contrasting active and passive voice.

- (5) I saw a house. It was built by a man.
- (6) I saw a man. He built a house.
- (7) I saw a house. A man built it.
- (8) ?I saw a man. A house was built by him.

Instrument. Texts were constructed to test the effect of the N-Pron alternation on π judgements. Roughly the first half of the sentences in each text had one NP as theme; the second half of the sentences had a second NP as theme. A transition sentence (TS) separated the two parts of the text; it mentioned both NP's, one as agent (Ag), one as patient (Pa). Except in the TS, both NP's appeared nominally only on first occurrence, pronominally thereafter.

*****INSTRUCTIONS*****

Read the short "story" below. When you are finished, please mark an "X" at the beginning of any sentence if it starts a section discussing a new topic. When you are completely finished, please turn over your questionnaire so that the person conducting the survey will know that you are done.

John lives in a house on the corner. He hates it when people cut across his lawn. He has terrible fits of temper about it. He punched Meg in the nose one day. She was fortunate not to have been seriously injured by the attack. She was surprised, of course, that it happened. She didn't know that people could be so fanatical about their lawns, or she would never have taken the shortcut across the corner.

Figure 1.
Sample text.

There were four basic text forms. One gave some sentences about a *man* (Ag) in the first half, some sentences about a *house* (Pa) in the second half (text MH). Another had basically the same sentences, but those about the *house* (Pa) came first (HM). A third text (JM) form had several sentences about *John* (Ag), then several sentences about *Meg* (Pa). The fourth text (MJ) form was basically like the third, but with the sentences about *Meg* (Pa) first. Fig. 1 shows a sample version of the third text form.

Each basic text form had four versions; differences among them involved the TS. The TS was either active or passive. Also, the NP presented in the first half of the discourse appeared either nominally or pronominally in the TS. The four versions of the TS for the JM (*John-Meg*) basic text form are shown in (9)-(12).

- (9) John punched Meg in the nose one day.
- (10) He punched Meg in the nose one day.
- (11) Meg was punched in the nose one day by John.
- (12) Meg was punched in the nose one day by him.

Figure 2 shows the number of subjects tested with each text variant.

TEXT FORM		TS			
		active		passive	
		N	Pron	N	Pron
	MH	40	31	51	--
	HM	37	34	37	35
	JM	15	15	15	15
	MJ	15	15	16	15

Figure 2.
Number of subjects
given each text
form.

Expectations. The general thematic organization of each text was intended to encourage experimental subjects to indicate a ¶ immediately before or after the TS. It was expected that the N-Pron alternation would significantly affect the tendency of subjects to indicate a ¶ just before the TS, since the N-Pron alternation should control the strength of the anaphoric 'link' across that possible ¶. A text with a pronominal reference in the TS should motivate fewer subjects to mark a ¶ at that point than should the corresponding text with a nominal reference. This is graphically illustrated in Fig. 3 (following page).

It was assumed that the effect of the N-Pron alternation on the tendency to mark a ¶ after the TS would be minimal, since the anaphoric 'link' did not 'cross' that potential boundary.

Subjects. All of the experimental subjects were adult native speakers of English.

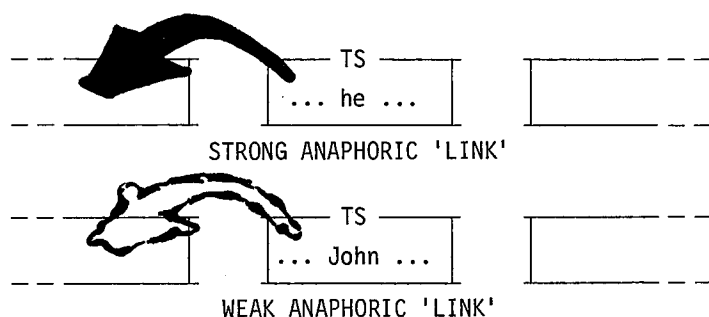


Figure 3.

Procedure. Each person who conducted a survey session (most of the subjects were surveyed in groups of 15 or more) followed explicit prepared directions. The instructions read to the subjects purposely avoided mention of 'paragraphs' or 'paragraphing'. This was done to prevent them from applying prescriptive 'grammar book' rules to the task. Subjects completed a short demographic profile on the first page of a two-page form. The second page contained the directions to the subject and a text (as in Fig. 1, for example). Each subject was tested with only one variant of one form.

Results and Discussion. Several English teachers were each shown an individual form of the text and were asked to suggest ¶'s. In every case, the English teacher's response was to give one (or no) ¶ (depending on the text form); the ¶, if given, was always right before or after the TS. Although subjects tended to agree with this judgement, well over 1/3 indicated 2 or more ¶'s. See Fig. 4. Most of the breaks did occur just before or after the TS: at BREAK1 or BREAK2, respectively. The overall number of subjects marking breaks at BREAK1 and BREAK2 is shown in Fig. 5.

No. of Breaks	Absolute Freq.	Relative Freq. (%)	Cum. Freq. (%)
0	25	6.5	6.5
1	189	49.0	55.4
2	79	20.5	75.9
3	62	16.1	92.0
4	22	5.7	97.7
5	6	1.6	99.2
6	1	.3	99.5
7	1	.3	99.7
8	1	.3	100.0

Figure 4. Number of breaks reported.

		Absolute Freq.	Relative Freq. (%)
BREAK1	BREAK	261	67.6
	NO BREAK	125	32.4
BREAK2	BREAK	147	38.1
	NO BREAK	239	61.9

Figure 5.
BREAK1 vs. BREAK2.

In Fig. 5 observe that the total number of breaks marked at BREAK1 and BREAK2 is greater than the total number of subjects (i.e. $261 + 147 = 408 > 386$). This indicates a substantial number of subjects who marked "X's" at both BREAK1 and BREAK2. The data in Figures 4 and 5 suggest one thing rather strongly. The subjects were not applying exactly the same criteria to 'paragraphing' decisions as were the English teachers.

Overall, more subjects marked a break at BREAK1 than at BREAK2. See again Fig. 5.

		N	Pron
BREAK1	BREAK	71.2	62.5
	NO BREAK	28.8	37.5
BREAK2	BREAK	31.0	48.1
	NO BREAK	69.0	51.9

Figure 6.

Note that 62.5% of the subjects marked a break at BREAK1 despite the presence of a pronoun in the TS. This contradicts the informal hypothesis of one linguist who suggested that the study would show that 'you shouldn't start a paragraph with a pronoun.'

		BREAK1		BREAK2	
		P	P1-P2	P	P1-P2
TEXT FORM	MHA	.83	.10	.23	-.26
	MHP	--	--	--	--
	HMA	.65	.17	.61	-.02
	HMP	.36	-.08	.72	-.10
	JMA	.73	.13	.13	0
	JMP	.70	.07	0	0
	MJA	.83	.07	.40	0
	MJP	.77	.08	.39	-.41

Figure 7.

Fig. 7 summarizes the major results obtained. 'P' is the overall proportion of breaks for a given text variant. It was calculated as $P = (P1+P2) / (N1+N2)$. 'P1' and 'P2' are the proportions of breaks indicated in corresponding text variants with nominal and pronominal reference in the TS, respectively. 'N1' and 'N2' are the numbers of subjects given each of the corresponding text forms.

From these results, two general statements can be made. The use of a pronoun in the TS usually decreased the proportion of breaks at BREAK1 (note the positive values for P1-P2 in that part of Fig. 7). Also, use of the pronoun never decreased the proportion of breaks at BREAK2, and sometimes significantly increased the proportion there. Thus, the use of a pronoun increased the cohesion of the TS with the earlier part of the text, and, could at the same time cause a 'breaking away' of that sentence from the following block of text.

The N-Pron alternation had a very different effect on texts with active vs. those with passive TS's.

In texts with an active TS, for BREAK1, the value of P1-P2 increased as P decreased. See Figure 8. A higher value for P meant that more (or stronger) Π cues were present. As P decreased, fewer (or weaker) cues were present, and the effect of any one cue should become more noticeable. This was seen in a strong negative correlation between P and P1-P2. Pearson's r for this correlation was calculated to be $-.95$. A t-test for r gave a 97.5% level of confidence in the significance of this value.

Usually, the use of a pronoun in an active TS had no detectable effect on BREAK2.

In texts with passive TS's, the effect of the N-Pron alternation was not clearly patterned.

Finally, this broad generalization can be made. With regard to a possible intervening Π , a pronominal reference has the effect of establishing a stronger anaphoric 'link' to an earlier coreferential NP than does a full nominal reference. However, the use of passive voice in the same sentence can vigorously interact with this effect, and in ways that are not yet clear.

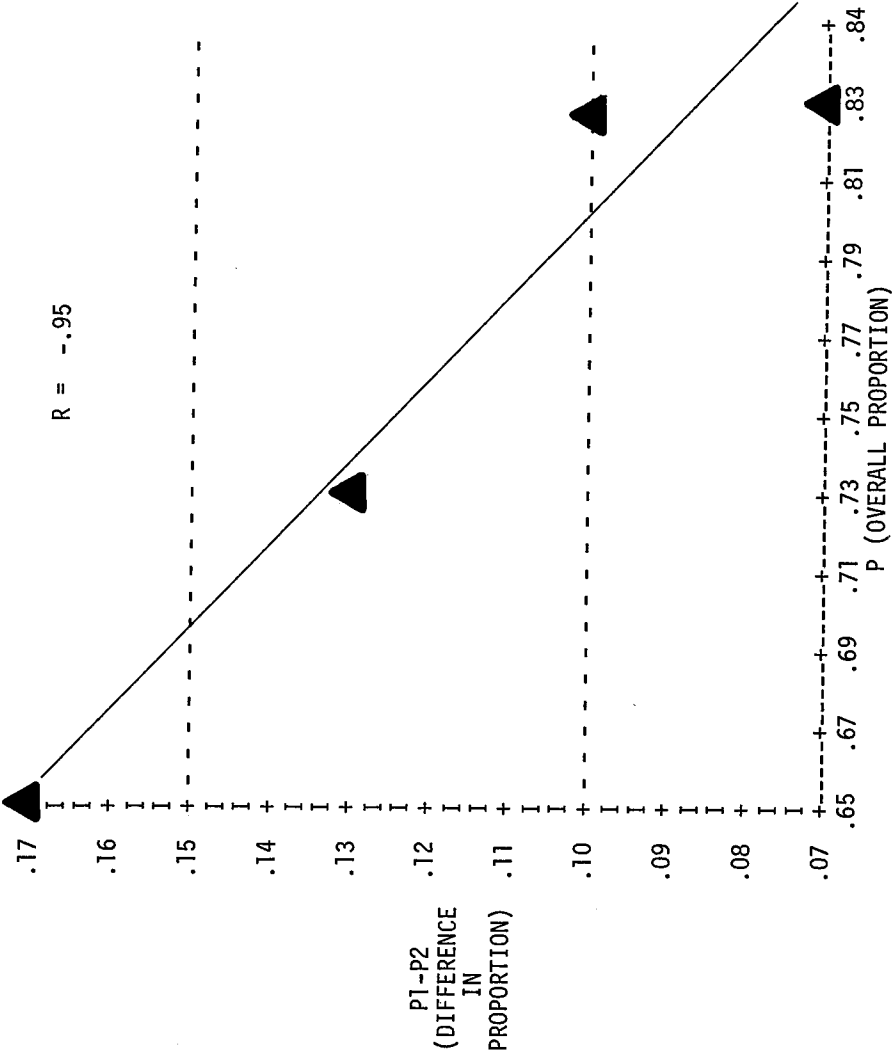


Figure 8.
Scatterplot of
BREAK1 actives.

REFERENCES CITED

- Bolinger, Dwight. 1977. Pronouns and repeated nouns. Reproduced by the Indiana University Linguistics Club.
- Clark, H. H. and E. V. Clark. 1968. Semantic distinctions and memory for complex sentences. *Quarterly Journal of Experimental Psychology* 20.129-138.
- Hinds, John. 1977. Paragraph structure and pronominalization. *Papers in Linguistics* 10.77-99.
- Koen, Frank, Alton Becker, and Richard Young. 1969. The Psychological Reality of the Paragraph. *Journal of Verbal Learning and Verbal Behavior* 8.49-53.
- Morton, J. 1966. Discussion of 'On hearing sentences'. *Psycholinguistics Papers*, ed. by J. Lyons and R. J. Wales, 10-23. Edinburgh University Press.
- Padučeva, E. V. 1974. On the structure of the paragraph. *Linguistics* 131.49-58.

KOSENA PARAGRAPH STRUCTURE

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0. Introduction

Kosena is a clause chaining language in the highlands of Papua New Guinea. It utilizes switch reference markers and medial/final verbs. The medial-final verb chain has been referred to as a paragraph. This paper presents an analysis of the discourse structure of a Kosena procedural text from within the framework of a stratified communication model. This model is based on the initial concepts of Sydney Lamb, but modified by Ilah Fleming (1974). The text being studied was obtained from data analyzed by Robert Longacre (1972).

One of the questions which is of interest is what determines when a final verb construction is to be used? If it signals a paragraph boundary, then what is a paragraph? Is it a morphological construction, a semantic unit, a referential unit, or something else? There is a need to determine why certain constructions or discourse features are used and when to use them.

Within Fleming's model, the text is analyzed from the perspective of three strata: the Morphemic (M), Semantic (S) and Communication Situation (CS). By convention, these are arranged with the CS at the top then the S and finally the M. For encoding, the output of an upper stratum provides the input to a lower stratum and influences what is to be activated in the lower stratum.

Whenever a choice is made in an upper stratum it is realized in a lower stratum. An incident in the CS (^{CS}Incident) can be realized as an event in the S (^SEvent) which can in turn be realized as a clause in the M (^MClause). A diagonal slash is used to represent realizations between various strata so that the previous realizations can be written as follows:

^{CS}Incident/^SEvent/^MClause

Relationships between units within the same stratum are termed tactic relationships. These relationships are expressed within the context of a construction. A construction such as a semantic event is composed of constituents. Although the constituents have both a FUNCTION and a filler, the FUNCTION part of a constituent is often used to refer to the whole constituent.

^SEvent_{ACT} = AG:thing & ACTIV:action & (PAT:thing)

Likewise a morphemic clause is composed of constituents which consist of a relative sequential position and a filler of that position.

$${}^M\text{Clause} = P_3:n, NP \ \& \ P_2:n, prn \ \& \ P_1:PostP \ \& \ C:v$$

The constituents, whether FUNCTIONS or relative sequential positions are filled by members of the specified distributional class (S thing, action; M noun, pronoun, verb) or an embedded construction.

The text has been analyzed in three stages. Each stage consists of an examination of the relevant constructions within a particular stratum. These constructions are displayed in the form of a trace: morphemic, semantic, or referential.

1. Morphemic Trace

The morphemic trace is organized vertically according to the various morphemic constructions which are chained together to form the text. In this text, these constructions are either a clause, verb or noun. The trace is organized horizontally according to two criteria: 1) the constituents of the clause and 2) the morphemes which link the clauses together. Each clause constituent has a column relative to its sequential order. The linking morphemes are separated into the first column. Within the text, these links all occur clause initial except 'omba' which occurs clause final. It has been included in this column for convenience. Listed above each column is the semantic FUNCTION which that position realizes. In this text, the Kosena clause has only three positions preceding the center constituent and none following it.

$${}^M\text{Clause} = P_3:n, NP \ \& \ P_2:n, NP \ \& \ P_1:PostP \ \& \ C:v$$

These positions realize the following semantic functions.

$$\begin{array}{ll} \begin{array}{l} M \\ Cl\ P_3 \end{array} \backslash \begin{array}{l} S \\ AG \end{array} & \begin{array}{l} M \\ Cl\ P_1 \end{array} \backslash \begin{array}{l} S \\ SPAT\ LOC \end{array} \\ \begin{array}{l} M \\ Cl\ P_2 \end{array} \backslash \begin{array}{l} S \\ \left\{ \begin{array}{l} INSTR \\ PAT \\ SPAT\ LOC \end{array} \right\} \end{array} & \begin{array}{l} M \\ Cl\ C \end{array} \backslash \begin{array}{l} S \\ ACTIV \end{array} \end{array}$$

The linking morphemes realize interpropositional constituents. All of the ones in this text realize sequential temporal arrangements. 'Omba' is a prior relational and the other two are subsequent relationals.

$$\begin{array}{ll} \begin{array}{l} M \\ omba \end{array} \backslash \begin{array}{l} S_{TA} \\ SEQ \end{array} \begin{array}{l} PRIOR \\ \end{array} & \begin{array}{l} M \\ \left\{ \begin{array}{l} minka \\ minkakemba \end{array} \right\} \end{array} \backslash \begin{array}{l} S_{TA} \\ SEQ \end{array} \begin{array}{l} SUB \\ \end{array} \end{array}$$

New Guinea languages are famous for their clause chaining characteristics. Within this text are three distinct types of verbs: dependent medial, independent medial, and final.

Dependent medial verbs are suffixed with a same subject(ss) marker and an anticipatory subject marker. The same subject marker refers to the subject of the clause immediately following. The anticipatory subject marker agrees in person and number with that same subject. In the trace of medial and final verb affixes, column C contains the same subject marker 'e' and column D contains the various anticipatory markers.

	MOFPHEMJC TRACE	AGENT	INSTRUMENT SPAT LOC GOAL	SPAT LOC	ACTIVITY
		P ₃ : n, NP	P ₂ : n, prn	P ₁ : PostP	C: v
1.	ombá	aalai-mo woman-desig	iyánnóí-mo child-desig		antáúsukáá- wa-sa-mo deliver/baby-pres/ they-they-desig
2.			mila thus		kwé-o cont-do/pres/they
3.			kígauma póíma garden pig		ákáma-e-sa pluck-ss they
4.	ombá				antáúsukáá-wa-sa-mo deliver-pres/they- they-desig
5.			mindááó'íá that/village		ivátuw-e-sa leave-ss-they
6.	ombá	kwaai-mó men-desig			
7.			ó'naapata another/village		kwé-gwae cont-sleep/pres/they
8.					kwé-gwae-wa-na cont-sleep-pres/they it
9.		sontáa kaeláí week two mindá that			ków-isa-sa go-pres/it-they
10.	minákémbá		toómbá food		kw-ákal-e-sa cont-pluck-ss-they
11.			póí pig		kwe-v-e-sa cont-shoot-ss-they
12.			mila thus		úma-e-sa do-ss-they
13.				nompá mólu water down	kaumak-é-sa cook-ss-they
14.					násuw-é-sa eat-ss-they
15.		awajko her/husband			íma kwé-na-i no cont-eat-he
16.		ó'on-kwaasi other-men évoka-kwaasi some-men			násuw-é-sa eat-ss-they
17.					iyó-wa-sa PO/up-pres/they-they
18.		aalai women	tanomba feast		kaumak-é-ra cook-ss-they

	AGENT	INSTRUMENT SPAT LOC GOAL	SPAT LOC	ACTIVITY
	P ₃ : n, NP	P ₂ : n, prn	P ₁ : PostP	C:v
19.		kwanaamba barricade		umak-e-sa build-sa-they
20.				aisotalaa-wa-sa line/up-pres/they- they
21. minka	kwaaf men			iyoo-wa-sa go/up-pres/they-they
22.		kaa'u'a nettles		agai-tinka'a-wa-sa beat-them/benef- pres/they-they
23.				usayaa'il-usayaa'il-e-sa pass/by-pass/by-ss- they
24.		naa'opa'a village		u-kwe-gwae go/up-cont-sleep/pres/ they
25.		kentf-naao-naao'a their-village- village		u-kwe-gwae go/up-cont-sleep/pres/ they
26.	mindama mi that that awaikombá her/husband			íí'an-ivo his/sickness-cert
27.				s-e-sa say-ss-they
28.		mila thus		kwé-o do/pres/they
29.	minkwasaí that/talk			ánasapw-i finish-it

ABBREVIATIONS

benef	benefactive
cert	certainty
cont	continuous
desig	designator
pres	present
ss	same subject

$$\left. \begin{array}{l} e = ss \\ sa = 3p \\ na = 3s \end{array} \right\} \text{anticipatory}$$

Independent medial verbs also have the anticipatory markers, but rather than having the same subject marker 'e', they have a suffix which agrees with the verb tense and the person and number of the subject within their own clause. This suffix also occurs in column C. Traditionally its occurrence has been analyzed as signaling a different subject in the next clause. The majority of the time this is true. Therefore it is referred to as a different subject verb.

$$\left. \begin{array}{l} wa = 3p/\text{pres} \\ isa = 3s/\text{pres} \end{array} \right\} \text{different subject}$$

Longacre has chosen to analyze this independent medial verb as a sentence final verb. Consequently he views a sentence as a string of clauses with dependent medial verbs and ending with a clause containing an independent medial verb. In referring to the verb trace, the broken line indicates his sentence boundary.

The final verb is distinguished by different suffixial morphemes. It consists of a tense suffix plus a suffix which agrees in person and number with its own subject. This set of subject markers differs from those of the independent medial verb. The final verb is also distinguished by having no anticipatory marker. Column B contains the tense suffix and column E contains the subject marker.

$$\begin{array}{l} \# = \text{present tense (unmarked)} \\ i = 3s \\ \# = 3p \text{ (unmarked)} \end{array}$$

Longacre refers to the final verb as a paragraph marker. These paragraph boundaries are indicated in the verb trace by a solid line.

How can we predict when a final verb should be used? Just to describe these features as a grammatical sentence or paragraph is not sufficient. However, the answer to these questions must be sought from within either the semantics and/or the Communication Situation. I have therefore, chosen not to posit a morphemic sentence or paragraph. These morphemic groups are realizations of higher stratum phenomenon which are encoded within the context of a morphemic chain.

$$^M\text{Chain} = \left[1. \left[\begin{array}{c} \text{minkakemba} \\ \text{minka} \\ \emptyset \end{array} \right] 2. \left[\begin{array}{c} \text{Cl} \\ \text{vw} \\ \text{VW} \\ n \end{array} \right] 3. \left[\begin{array}{c} \text{omba} \\ \emptyset \end{array} \right] \right]^n$$

2. Semantic Trace

The semantic trace is organized according to morphemic criteria. It is horizontally divided into columns according to verb types, particles and quotations. These grammatical features weave in and out through the text and perform definite functions. The second column contains sequentially related propositions which are realized by medial/final verbs. For example in lines 3 and 4, first the men leave and then they sleep. Each proposition has a dual relationship. It is subsequent to the one above it

Morphemic trace of medial and final verb affixes

	A	B	C	D	E	
	verb	tense	switch	anticip	subject	
	word		reference	marker	marker	
1.	VW		wa	sa		women deliver
2.	VW	#			#	they do thus
3.	VW		e	sa		they gather
4.	VW		wa	sa		they deliver
5.	VW		e	sa		men leave
6.	∅		∅	∅		men leave
7.	VW	#			#	they sleep
8.	VW		wa	na		they sleep
9.	VW		isa	sa		2 weeks pass
10.	VW		e	sa		they gather food
11.	VW		e	sa		they shoot pig
12.	VW		e	sa		they do thus
13.	VW		e	sa		they cook
14.	VW		e	sa		they eat
15.	VW	#			i	husband not eat
16.	VW		e	sa		other men eat
17.	VW		wa	sa		they go up
18.	VW		e	sa		women cook
19.	VW		e	sa		they build
20.	VW		wa	sa		they line up
21.	VW		wa	sa		men go up
22.	VW		wa	sa		women beat men
23.	VW		e	sa		men pass by
24.	VW	#			#	they sleep
25.	VW	#			#	they sleep
26.	VW					"So husband won't get sick"
27.	VW		e	sa		women say
28.	VW	#			#	they do thus
29.	VW	#			i	talk finished

'At Birth of Still-Born Baby'

When a woman gives birth to a still-born baby this is what they do.

The women gather food and pig and when they deliver the still born baby, the men, because they are men, leave the village and go to sleep in another village.

They sleep. About two weeks pass. Then they gather food and shoot a pig, that's what they do and down at the river they cook and eat it, but her husband doesn't eat.

Other people eat it, and they come back again. The women make a feast and a barricade and line up. Then the men go up. They (women) beat them with nettles. The men pass by one at a time and go up to the village to sleep, to their own villages. So that her husband won't get sick, that's what they do. That's the end.

and prior to the one below it. Together they constitute the event-line of the procedure.

Propositions in the other columns relate to the proposition they are horizontally parallel to. In contrast to the propositions in column 2, these do not relate to other propositions in their own column. Their semantic relationship is labeled at the top of each column. For example the propositions in column 1 are temporally prior to the parallel propositions. Therefore in line 3 the women deliver then the men leave. Propositions which have a sequential temporal relationship to one another are realized as follows:

$$\begin{aligned}
 S_{\text{Temporal Arrangement}}^{\text{SEQ}} &= \text{PROP}_{\text{PRIOR}} \& \text{PROP}_{\text{SUB}}^{\text{SUB}} \\
 S_{\text{TA}}^{\text{SEQ}} / M_{\text{Chain}} &= \left[1. \left[\begin{array}{c} \text{minkakemba} \\ \text{minka} \\ \emptyset \end{array} \right] \quad 2. \left[\begin{array}{c} \text{Cl}_{\text{vw}} \\ \text{VW} \\ n \end{array} \right] \quad 3. \left[\begin{array}{c} \text{omba} \\ \emptyset \end{array} \right] \right]^2 \\
 S_{\text{TA}}^{\text{SEQ}} / \text{PRIOR} / M_{\text{Chain2}} \& \text{Chain3} \\
 S_{\text{TA}}^{\text{SEQ}} / \text{SUB} / M_{\text{Chain 1}} \& \text{Chain 2}
 \end{aligned}$$

2.1 S_{Discourse}

The discourse structure of this particular text consists of three ordered and three unordered constituents.

$$S_{\text{Disc}} = \left[P^n: \text{Event}_{\text{ACT}} + C^n: \left[1. \text{REP} \& 2. \text{TA}^n \right] + F: \left[\text{Event}_{\text{CONV}} \& \text{PHASE: final} \right] \right]$$

& TA & SUMMARY & CONV BLK

2.11 Introduction (S_{DiscP})

The first ordered constituent consists of the propositions in line 1. These introduce the topic of the discourse. This division is substantiated by a major break in the morphotactic trace where the final verb realizes the last proposition.

2.12 Body (S_{Disc C})

The second ordered constituent consists of the propositions in lines 2 through 19. These propositions delineate the procedures taken, thereby realizing the referential plot of the discourse. There are three sections within this division (lines 2-4, 4-9, 9-19) which relate to procedural phases in the referential plot. Each section consists of propositions which are temporally arranged. The sections also have a tail-head relationship in which the first proposition of each section is a repetition of the last proposition in the previous section. The last proposition in each section is again realized by a final verb.

2.13 Finis (S_{Disc F})

The last ordered constituent is line 20 which is a formulaic ending. It contains a conversational event plus the additional constituent of a final phase. It is the finis of the text and is realized by a final verb. These three divisions constitute the ordered constituents of the text and are written formulaically with their realizations as follows:

$S_{\text{Discourse}} =$
 $P^n: \text{Event}$
 $C^n: [1, \text{REP}^{\text{ACT}} 2, \text{TA}^n]$
 $F: [\text{Event}_{\text{CONV}} + \text{PHASE:final}]$

$/M_{\text{Chain}}(1-29)$
 $/M_{\text{Chain}}(1-2)$
 $/M_{\text{Chain}}(3-28)$
 $/M_{\text{Chain}}(29)$

It has been shown now that each of these three constituents, the introduction, body and finis of the text, ends with its last proposition being realized by a final verb. It can be concluded then that one of the factors which activate a final verb is the break between each of these semantic units. Final verbs which occur elsewhere will need further explanation.

The unordered constituents of the discourse consist of

- 1) temporally arranged propositions which are realized by a clause plus *minkakemba*, *minka*, or *omba*; 2) summary propositions; and
- 3) propositions within a conversation block.

'Omba' may function to emphasize the prior event which occasions the subsequent event. A 'mo' suffix occurs on every clause constituent when *omba* is used. This suffix has been traditionally labeled a designatory suffix. The term designatory is defined as indicating that a particular construction or the subject of a particular action is pointed out for special attention or emphasis.

The whole procedure in this discourse is the result of a woman delivering a stillborn child. Line 1 in the semantic trace introduces this as the topic of the text and it is again restated in the main body of the discourse (line 3). Each time it is realized with 'omba' and the designatory suffix.

The third occurrence of *omba* is in line 4 of the semantic trace. If its occurrence is for emphasis then the focus in this instance is not upon the action (leaving) and the participants (men), but only upon the 'men'. This is demonstrated by the fact that the same event occurs in line 3 of the semantic trace but has no *omba* and its constituents are realized differently. In line 3 the AGENT has zero realization and the ACTIVITY is realized by a verb. In line 4, the ACTIVITY has zero realization and the AGENT is realized by a noun with the designatory suffix. It may be that the same event must be stated twice with different realizations in order to focus only on the participant. If this is so then *omba* in conjunction with the designatory suffix is realized in order to signal emphasis upon either all the constituents of an event or just the participants of that event.

$M_{\text{Chain}}^3: \text{omba} \setminus \text{STA}_{\text{SEQ}} \text{PRIOR} \parallel \text{FOCUS}$

Longacre (1972:144) states that '*minka/minkakemba*' are conjunctive particles which mark off subparagraphs within the main paragraph. Their occurrence in this text is too limited to make any statement according to this analysis.

The propositions within a conversation block are located in line 19 of the semantic trace. Kosena utilizes quotations in order to express purpose. The quoted material here is not actually a reference to what the women said but rather it is used to express the purpose behind the whole procedure. In other words,

	1 S ^A SEQ PRIOR	2 S ^{temporal} Arr. Propositions	3 S ^A SEQ SUB	4 S ^{REPETITION}	5 S ^{SUMMARY}	6 S ^{Conversation Block}
	^N ombas-VW/N	^N VW(medial,final)	^N minkakombas/minkas-VW	^N VW(medial)	^N hila-VW(do)	^N VW
1	^E V ^{ACT} =AG:women f ACT:deliver PAT:child				^E V ^{ACT} =AG:women ACT:do PAT:thus	
2		^E V ^{ACT} =AG:women = ACT:gather PAT:food & pig				
3	^E V ^{ACT} =AG:women ACT:deliver	^E V ^{ACT} =AG:men ACT:leave				
4	^E V ^{ACT} =AG:men ACT:leave	^E V ^{ACT} =AG:men ACT:sleep		^E V ^{ACT} =AG:men ACT:sleep		
5		^E V ^{ACT} =AG:2 weeks ACT:pass	^E V ^{ACT} =AG:men ACT:gather PAT:food			
6		^E V ^{ACT} =AG:men ACT:shoot PAT:pig				
7					^E V ^{ACT} =AG:men ACT:do	
8		^E V ^{ACT} =AG:men ACT:cook				
9		^E V ^{ACT} =AG:men ACT:eat		^E V ^{ACT} =AG:men ACT:eat		
10		^E V ^{ACT} =AG:husband f ACT:(not)eat				
11		^E V ^{ACT} =AG:men ACT:go				
12		^E V ^{ACT} =AG:women ACT:cook PAT:eat				
13		^E V ^{ACT} =AG:women ACT:build PAT:barriade				
14		^E V ^{ACT} =AG:women ACT:line up	^E V ^{ACT} =AG:men ACT:go			
15		^E V ^{ACT} =AG:women ACT:beat PAT:men				
16		^E V ^{ACT} =AG:men ACT:pass-by				
17		^E V ^{ACT} =AG:men ACT:sleep				
18		^E V ^{ACT} =AG:men ACT:sleep				
19		^E V ^{CONV} =SPKR:women EIPR:easy			^E V ^{ACT} =AG:women f ACT:do PAT:thus	QUOTE:Her husband won't get sick
20		^E V ^{CONV} =SPKR:2 EIPR:talk PHASE:finiab				

all of these steps are followed after the birth of a stillborn child so that the husband will not get sick. Consequently the propositions in this line of the semantic trace are not part of the referential plot. Instead they are simply inserted by the communicator whose intent was to express the purpose of these procedures. It is also important to note that in this small section the final proposition is also realized by a final verb.

The summarizing propositions occur in lines 1, 8, and 20. In line 1 the proposition functions as a cataphoric summary, linking the introduction to the body of the discourse by referring ahead to the whole procedure. In line 19 it functions as an anaphoric summary, linking the purpose of the discourse to the body by referring back to the whole procedure. The summary in line 8 is not a major break as in the other instances but is possibly a semantic device used to tie the previous two events of hunting and gathering to the following two events of cooking and eating.

3. Referential Trace

The referential trace depicts the referential plot of the discourse. All referential information is located within the communication situation stratum. Also included in this stratum are the various cultural beliefs and expectations which are necessary for an understanding of this discourse. Furthermore this stratum includes the beliefs, intents and attitudes of both the communicator and his audience.

The referential trace is divided horizontally into columns. Each column represents either time, place or a referent in the discourse. The trace is vertically organized into the actual time sequence of the incidents. Each incident is labeled with a 'T' for time and numbered according to its order in the development of the plot. Vertical lines with a 'place' column indicate the span in which incidents happen at that location.

Two final verbs occur in the portion of the morphotactics which realizes the referential plot. In order to ascertain what controls their activation I have sectioned off the vertical sequence of events by a wide black line when a final verb occurs.

It appears that the referential plot is divided into three procedural phases. The first phase involves the initiation of the procedure. The occasioning incident occurs when a woman delivers a stillborn child in their village. The men respond by leaving and sleeping in another village.

The second phase involves the men's ritual preparations. This takes place two weeks later in the other village where the men perform a ceremonial feast. The husband does not eat, however, for some cultural reason.

The last phase involves the women's preparations. The men return and then the women prepare a ceremonial feast in their village. Afterwards the men are beaten with nettles and go off to sleep.

Each procedural phase seems to be a distinct unit regarding the continuity of its incidents and their location, time and referents. Likewise, in the morphotactics they are distinctly marked by the final verb. The communicators intent to give the

REFERENTIAL TRACE	RIVER	(another) VILLAGE	MAN	(their) VILLAGE	WOMEN	HUSBAND	CHILD	FOOD	STOCK	PEST	ENVIRONMENT
TIME					T ₁ gather T ₂ deliver		T ₂ PATIENT	T ₁ PATIENT	T ₁ PATIENT		
		T ₃ PLACE DIR:to T ₄	T ₃ leave T ₄ sleep(H)	T ₁ PLACE T ₂ PLACE T ₃ DIR:from							
T ₅ (2 weeks pass											
	T ₈ PLACE T ₉ PLACE DIR:from T ₁₀		T ₆ gather(H) T ₇ shoot(H) T ₈ cook T ₉ eat T ₁₀ go			T ₆ not eat		T ₆ PATIENT T ₈ PATIENT T ₉ PATIENT	T ₇ PATIENT T ₈ PATIENT T ₉ PATIENT		
				T ₁₀ PLACE DIR:to T ₁₁ PLACE T ₁₂ T ₁₃ PLACE T ₁₄ DIR:from T ₁₅ pass-by T ₁₆ sleep	T ₁₁ cook T ₁₂ build T ₁₃ line-up T ₁₄ PLACE T ₁₅ beat				T ₁₁ PATIENT T ₁₂ PATIENT		

*Although being morphologically marked as sequential, it appears to be simultaneous with the "beating". Its affixation groups it with "sleeping".

Communication Situation: "At Birth of a Stillborn Baby"

LANGUAGE: Kosena

- CULTURE: 1. Sickness is caused by spirits.
2. When a stillborn baby is born, the father will become sick.
3. More information needs to be known regarding the reason for the husband not eating and the men being beaten.

CONVENTIONS:

- INTENT: 1. Give the procedure followed when a stillborn child is born.
2. Give the purpose for this procedure.

REFERENTIAL

- REMARK: 1. Morphologically marked paragraph boundaries are indicated by thin horizontal black lines.
2. Morphologically marked sentence boundaries are indicated by thin horizontal black lines.
3. "H" indicates an habitual performance.

purpose of this procedure is also derived from this stratum and has the final verb as its grammatical marker.

4. Conclusion

Several definitive statements can now be made regarding the activation of the final verb. It has been shown that the final verb is activated by both semantic units and referential units. These units occur in two distinct strata and should not be collapsed under the single heading of a 'paragraph'.

Semantically, the final verb is activated at the end of the introduction, body and finis. The body realizes the referential plot which consists of a number of procedural phases. These phases are cohesive units consisting of several incidents which are tied together by a commonality of time, place, participants, and purpose. The final verb is also activated at the end of each of these referential units. Finally the communicator may wish to interject a comment regarding his intent, belief, or attitude about something in the story, such as the purpose behind this procedure. When this occurs in the communication situation the final verb is activated.

REFERENCES

- Fleming, Ilah. 1974. Field Guide to Communication Situation, Semantic and Morphemic Analysis. Mimeo. Dallas. Summer Institute of Linguistics.
- Longacre, Robert E. 1972. Hierarchy and Universality of Discourse Constituents in New Guinea Languages. Georgetown University Press, Washington, D.C.

INFLUENCES ON TEMPORAL SEQUENCE IN NARRATIVE

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1. Introduction. The tendency in a narrative is for the grammatical sequence of events to parallel the referential or real-world sequence of events. However, the temporal order, represented by the grammatical sequence, does not always coincide with the chronological order. At various points along the narrative there are displacements of time, forward and backward, where event sequences are reported out of chronological order. Most of these displacements in time are of a secondary nature, representing such information as background, summaries, explanations and descriptions, and where this information occurs in the narrative is not very restricted. Displacements involving primary events, however, are more restricted, and the points at which these occur represent breaks in units of the structure of the narrative.

The purpose of this paper is to discuss some of the influences which change the temporal (i.e. grammatical) sequence of events in a narrative. The main concern is for primary events, those which form the backbone structure of the narrative. The distinction between primary and non-primary (secondary, tertiary, etc.) events must be maintained. Thus, unless otherwise stated, "event" refers to primary events.

2. Sequence: chronological and temporal. The relationship between any two events is either simultaneous or sequential. If we are concerned about preserving chronological order in the grammar, the sequential relationship presents fewer problems. However, this is deceiving, for chronological order is not prescriptive, but descriptive. It is an organizing element in a narrative, a framework in which a narrative occurs.

For a narrative with n events, there is only one chronological order, but theoretically the number of temporal orders is $n!$ (read n factorial), which is $(n)(n-1)(n-2)...(n-(n-1))$. Only a very few of these possibilities may be acceptable as a narrative, and the best one may not even be the one in chronological order. The narrative itself occurs within a larger context, and thus the temporal order may vary from context to context. As an example, consider several people witnessing or experiencing the same sequence of

events. Each person brings into the narrative a different context, and there is room for variation of narrations (see Westrum 1976).

This kind of situation occurs frequently on the sentence level. A transitive may be passivized, but only in certain contexts is it acceptable. Other operations may also be performed, but only in certain contexts are they acceptable. Similarly on the discourse level the temporal ordering operation will not always be applicable, but it will be useful in determining discourse structure.

3. Elements which influence temporal sequence.

There are many elements which influence the temporal sequence of events in the grammar, but here I will discuss three: theme, plot and form. Theme incorporates a number of other elements, including setting, characterization, description and explanation. What all of these have in common is an orientation towards a subject, animate or inanimate. Linkage is typically logical, and the format is along the lines of an expository discourse. Plot is involved with the chronological linkage and nature of events. Form encompasses the grammatical structure used to convey the temporal order.

3.1. Theme. There are various levels of theme that occur in a narrative, from low-level themes to high-level themes. Lower-level themes typically consist of non-primary events, and the content is often, but not always, of a different time, relative to primary events. (1)-(4) below are examples of low-level

- (1) ...They were the windows of Brandy Hall, the ancient home of the Brandybucks. Long ago Gorhendad Oldbuck...had crossed the river... He built ...Brandy Hall, changed his name to Brandybuck...
Lord of the Rings I:141
- (2) The island of Singapore is not imposing in aspect, for there are no mountains; yet its appearance is not without attraction...
Around the World in 80 Days: 85.
- (3) He was so exact that he was never in a hurry, was always ready, and was economical alike of his steps and his motions...
Ibid: 15.
- (4) She was in extreme confusion. But the reasons for her unusual behavior on this particular evening were simple enough. She had...
That Hideous Strength: 44

themes. None of the texts contain primary events of the narrative.

- (5) ...And first, so that all may understand what is the peril, the tale of the Ring shall be told from the beginning even to this present. ... Then all listened while Elrond in his clear voice spoke of Sauron and the Rings of Power... Then through the years that followed he traced the Ring; ... Lord of the Rings I:318

(5) contains primary events that are part of the theme of the narrative. The trilogy itself spans a very short time relative to the life and history of the Ring. But in order to understand the trilogy fully, the author has presented a synopsis of the history in the middle of the narrative. This history could have come at the beginning of the narrative, yet it is not difficult to put it in its proper place and time.

The Great Gatsby is developed by the use of flash-backs into the lives of the participants. These flash-backs are primary events that explain the nature and present actions of the participants. If temporal and chronological order coincided, the same effect which is now present would not be achieved.

A narrative may be such that the events may be points of a high-level theme. Consider the Gospel of Matthew. Repeatedly the phrase "This was to fulfill what was spoken through the prophet." and its variants² occur. The theme of Matthew is to portray Jesus as the Messiah of the Jews. As events in the life of Jesus occur, these are correlated to prophecies made in the Old Testament. These events, then, stand out as points of an expository discourse. With this as a format, many of the events in the life of Jesus could be told out of chronological order, and many variations would be possible, and the theme of the narrative would be undisturbed.

Thus, there is a whole range of possibilities of theme, from low-level themes that do not affect primary events, to high-level themes which can rearrange primary events without disturbing the narrative.

3.2. Plot. Plot involves elements such as retrospect, memory, foresight, and simultaneous events. Thus when a main character becomes unconscious, what occurs surrounding his state and following it may remain untold until he regains consciousness, and then he is told what has happened. Similarly the full impact of some events in a narrative may be achieved in retrospect of when they occurred.

When two or more events occur simultaneously, they

cannot be narrated simultaneously, but only sequentially. In certain instances two event sequences are so inter-related that they can be interdigitated with each other. If done properly, the effect is an impression of simultaneity. In these instances also, one sequence does not take precedence over another, but they act in synergism.

For the most part, however, one sequence is narrated first in full, with the other following it. Which sequence comes first goes undetected, for it is only after the first sequence is narrated that the second sequence is begun, and when the first sequence was begun, there may have been no hint of a second one to follow. Even if the second sequence began before the first in chronological time, the plot would follow in a particular line, and then retrace itself over the same time period, or earlier, to pick up the second sequence. In (6) two sets of participants separate, only to come together later on in the narrative. Before they come together, however, the actions of the two sets are described, first one set, then the other, beginning with the main characters.

- (6) In the same moment the rope parted and immediately the little punt began to move along the bank in a steady current... Looking back, the last thing Bigwig saw was the face of General Woundwort staring out of the gap in the willow herb where the boat had lain. Watership Down: 368

(7) indicates the beginning of the second sequence:

- (7) When the punt floated down the river in the rain, part of General Woundwort's authority went with it. Ibid: 415

What is important is not the lapse in time, or the amount of narrative material, but the transition between the two time frames.

4. Form. If a certain temporal order is desired in a narrative, it may not be possible without a loss in the meaning intended, but it may also be due to the use of the improper form. For example, the past perfect is used to convey the displacement of past material, but it is not used repeatedly in a single text. It is used frequently for small amounts of material, and in larger stretches of material the past perfect is used in the beginning to set the time, and then the tense is switched to simple past. An introductory phrase may be used also to set the time frame, such as "What had happened was as fol-

lows:". Much of the time large amounts of material that are displaced in time are narrated by the use of conversation, such as was seen in (5). This is done in The Odyssey, where flashbacks are narrated by conversation.

Other forms that must be considered are punctuations and divisions such as chapters and sections. (Oral discourse would have its comparable forms.) For larger narratives these forms can be used effectively to introduce material that is out of chronological order, and still retain the flow in the narrative.

5. Conclusion. This paper has assumed that temporal order is a surface structure phenomenon, reflecting the deep structure of the of the temporal structure of the narrative. Multiple and acceptable surface structures representing a single deep structure point to the flexibility of the deep structure, but of more value are the points in the discourse at which change is not possible. These points define the boundaries and set the limits of the deep structure.

By taking a narrative and focusing on the temporal aspect, acceptable permutations of given combinations of events reveal breaks in units of the narrative structure. In changing the temporal order different forms will most likely be required, but the resulting narrative, even if it is acceptable, may possess a different set of characteristics from that of the original, such as a different theme or plot or intended meaning.

Notes:

1. The terminology came from Jones 1977.
2. Variants include 'Now all this took place that what was spoken by the Lord through the prophet might be fulfilled, saying...' (1:22); 'For this is the one referred to by Isaiah the prophet, saying...' (2:3) and others.

References:

1. Adams, Richard. 1972. Watership Down. New York: Avon Books.
2. Grimes, Joseph E. 1975. The Thread of Discourse. The Hague: Mouton.

3. Jones, Linda Kay. 1977. Theme in English Expository Discourse. University of Michigan Ph.D. dissertation.
4. Lewis, C.S. 1946. That Hideous Strength. New York: The Macmillan Company.
5. Matthew, the Gospel of. New American Standard version .
6. Pike, Kenneth L. & Evelyn G Pike. 1975. Grammatical Analysis. Huntington Beach, CA: Summer Institute of Linguistics.
7. Tolkien, J.R.R. 1965. The Lord of the Rings. New York: Ballantine Books, Inc.
8. Verne, Jules. 1963. Around the World in Eighty Days. New York: Airmont Books.
9. Westrum, Susan. 1976. "Chronological Mapping as a Useful Tool in Identifying Semantic Paragraph Groupings in Berik, Irian Jaya, Indonesia." in Ignatius Suharno and Kenneth L. Pike, eds. From Baudi to Indonesian. Indonesia: Regions Press.

PREDICATION TYPING OF ORAL AND WRITTEN EXPOSITORY GENRE

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INTRODUCTION

The decision to investigate Expository genre¹ (rather than Narrative, for example) was motivated by the author's long-standing interest in a perplexing problem: Why is it that some students are articulate in speaking but inarticulate in writing? Since much of what students are required to talk and write about falls under the rubric of exposition, it seemed reasonable to begin a search for an answer by studying expository discourse, the latter being defined as expression that informs, explains relations between concepts, develops an idea, makes a point. This paper will report on one aspect of a research project (Hesch, 1981) which sought to discover and develop a complexity measure for the underlying semantic structure of oral and written Expository genre. The two texts examined, 1) a spontaneous, naturally occurring conversation² between two college freshmen and 2) a series of traditional Freshman Composition papers, were subjected to predication typing. The resulting predication profiles or semantic schemata were classified and compared.

PREDICATION TYPING

The empirical semantic technique of predication typing (cf. Garvin et. al., 1967) uses paraphrasing as the means by which meaning can be made operationally observable.³ The technique requires a subject, in this case the author, to paraphrase the sentences of a particular text using a preselected list of predication types and paraphrasing schemata, the latter generally characterized by the form "A is in some way a function of B," A referring to the first term and B referring to the second term in the predication relationship. For example, the sentence "She may be slow or something" correlates with the paraphrasing schemata "A is defined as B," or "A has the property of B," and thus may be paraphrased either "She is defined as slow or something" or "She has the property of being a slow or something" and may be assigned to either predication type Definition, symbolized Df or predication type Description, symbolized by D,⁴ (cf. Table 1 *designates author formulated predication types). Predications resulting from paraphrases using a predication type without modification are termed BASIC PREDICATIONS, and those using a predication type with modifications are termed MODIFIED PREDICATIONS (Garvin et. al., 1967)(cf. Table 2 *designates author's terminology and expanded symbol system).

Thus in the simple sentence just exemplified, one basic predication type is used in each assignment. Modifying these predications could yield, for example "A is not defined as B," Df (Df $\rightarrow$ Df negative) or "A does not have the property of B," D (D $\rightarrow$ D negative) from the paraphrases "She is not defined as slow or something" or "She does not have the property of being slow or something" (cf. Table 2). More complex sentences, however, often require the use of combinations of predication types. For example, the sentence "The teacher can't give very much individual help to one child because of the many other children who may need help" correlates with three paraphrasing schemata associated with three predication types:

A is provided with B, Description of Equipment, E
 A is due to B, Statement of Causation, C
 A requires B, Indication of Requirement, Rq (cf. Table 1)

The sentence is paraphrased

The student can't be provided with very much individual help from the teacher due to the many children who may require help

and is symbolized by $\overline{E} \overline{C} Rq$, such symbolizations to be referred to as profiles. The contours or profiles of statements, i.e., the semantic schemata, that emerge from the above underlie the rationale for choosing predication typing as a means for measuring complexity. Simple, straightforward reasoning is reflected in simple profiles; refined and/or complicated reasoning is reflected in complex profiles. Categorization, classification, and analysis of these profiles reveal the underlying semantic complexity of the discourse.⁵

The profiles were classified according to four criteria:

1) The number of Predication Types Appearing in a Profile e.g., two place Pf/C

original: the parents are just doing it cause of the money⁶

paraphrase: It's being accomplished by the parents is due to the money.

schemata: A is accomplished by means of B, Pf (cf. Table 1)

A is due to B, C

e.g., three place Df $\overline{F}$ A

original: they won't see her when they kill her anyways so it's the point of it

paraphrase: It being so defined as the point is followed by their killing her anyways which will be accompanied by their not seeing her.

schemata: A is defined as B, Df

(cf. Table 1) A is followed by B, F

A is accompanied by B, A

e.g. four place $Ct_2/L/Cp/L$

original: On the other hand, Elizabeth, of Pride and Prejudice, can easily be compared with Marianne, of Sense and Sensibility.

paraphrase: This is in contrast to Elizabeth, found in Pride and Prejudice, being easily compared to Marianne, found in Sense and Sensibility.

schemata: A is in contrast with B, Ct

(cf. Table 1) A is found in B, L

A is comparable to B, Cp

Seven predication types was the maximum number appearing in a single profile.

2) The Extent of Concatenation

When two or more predications are concatenated by a coordinate expression (and, but, or), the resulting predication is termed a coordinate predication.

e.g. D-Ac

original: one it's illegal and number two he's y'know he's gonna have a lawsuit on his hands

paraphrase: One, it has the property of being illegal, and number two he's going to acquire a lawsuit.

schemata: cf. Table 1

Classification 4) below will further illustrate concatenation.

3) The Extent of Embedding

When one of the terms, i.e. either the A or the B term, consists of one or more than one other predication (cf. Table 2), the former is labeled the main predication and the latter the subordinate predication. The resulting predication is called a right or left branch compound.

e.g. $\overline{O}/\overline{De}$ right branch

main sub.

original: Modern science or whatever medecine they wouldn't invent these machines if they didn't want to keep the people alive

paraphrase: These machines would not have stemmed from them - modern science or whatever - if keeping people alive was not desired by them.

schemata: cf. Tables 1 and 2

e.g. $\overline{Cn}/Cs$ left branch

sub. main

original: they never think about it as y'know oh that's their child

paraphrase: It never concerns them that that constitutes their child.

schemata: cf. Tables 1 and 2

If both A and B terms of the main predication consist of one or more than one predication, the resulting predication is called a bilateral double compound predication.

e.g. $\frac{P}{A} \frac{D}{Main} \frac{Rs}{B}$

original: Also a friend can be a well wisher or one who will cheer you on when the tides of life run low.

paraphrase: The tides of life running low allow for a friend to have the property of being a well wisher which results in his cheering you on.

schemata: cf. Table 1

e.g. $\frac{D}{A} \frac{Mt}{main} \frac{C}{B} \frac{P}{P/Rq}$

original: As for a boy, the absence of a fatherly figure can be very detrimental. (sic) Detrimental in a way that as he grows up he may stray off into the wrong direction, because a boy looks up to his father as his idol for encouragement and guidance.

paraphrase: As for a boy, as he has the property of growing up, he may move toward the wrong direction due to the absence of a fatherly figure which allows for detrimental consequences since a boy requires a father to look up to as his idol for encouragement and guidance.

schemata: cf. Table 1

4) The Extent of Concatenation and Embedding

When three or more predication are related through various combinations of concatenation and compounding, the resulting predication is called a mixed complex predication.

e.g. $R_s / \overline{U} - P_f$

original: Whether he will use the education or trade he has gained wisely or (sic) will he continue to commit crimes of a higher degree, I think it depends on the influence which is put on him during his jail term.

paraphrase: The influence put on him during his jail term will, I think, result in either his using wisely the education or trade he has gained or his continuing to accomplish a higher degree of crime.

schemata: cf. Table 1

e.g. $\frac{I}{P} \frac{P}{Pf/Se} - E$

original: The young man will be sent to different types of programs to prepare him to have something to do when he gets out of jail. Or he can continue his education in jail.

paraphrase: The young man will be placed in different types of programs which will allow for his accomplishing something when he is removed from jail, or he can be provided with continued education in jail.

schemata: cf. Table 1

<u>SYMBOL</u>	<u>PREDICATION TYPE</u>	<u>PARAPHRASING SCHEMATA</u>
A	statement of accompanying circumstance	A is accompanied by B
Ac	statement of acquisition	A is acquired by B
B	indication of basic relation	A is based on B
C	statement of causation	A is due to B
Cn	statement of concern	A concerns B
Cp	statement of comparability	A is comparable to B
Cs	indication of constituency	A constitutes B
Ct*	statement of contrast	A is in contrast with B
D	descriptive statement	A has a property of B
De*	statement of desire	A desires B
Df	definition	A is defined as B
Dm	demonstration	A is shown by means of B
E	description of equipment	A is provided with B
Ef	indication of effect	A affects B
Ex	explanatory statement	A is accounted for by B
F	statement of succession	A is followed by B
I	indication of insertion	A is placed into B
L	indication of location	A is found in B
M	indication of measurement	A is measured by means of B
Ma	description of movement away	A moves away from B
Mt*	description of movement toward	A moves toward B
O	indication of origin	A stems from B
P	indication of possibility	A allows for B
Pf	description of performance	A is accomplished by means of B
Pr*	statement of precedence	A is preceded by B
R	statement of established result	A has been established as B
Rm	description of result of motion	A arrives at B
Rp	statement of represented condition	A is presented as B
Rq	indication of requirement	A requires B
Rs	statement of result	A results in B
S	assertion of adequacy	A satisfies the conditions for B

<u>SYMBOL</u>	<u>PREDICATION TYPE</u>	<u>PARAPHRASING SCHEMATA</u>
Se*	indication of separation	A is removed from B
T	statement of passage	A passes through B
U	description of use	A is used for B
Va	statement of value	A has the value of B
O	nonpredication	

Table 1. List of Basic Predication Types.

<u>SYMBOL</u>	<u>MODIFICATION</u>	<u>EXPLANATION</u>
$X \frac{A}{B}$	antecedent predication	A term is antecedent
$X \frac{B}{A}$	antecedent predication	B term is antecedent
?X	question predication	A term in question
X?	question predication	B term in question
X(?)	interrogative predication	entire predication questioned
$\overline{X}$	negative predication	entire predication negated
X-X	coordinate predication	two or more predications concatenated by coordinating expressions
X/X	*left branch compound predication	A term consists of *one or more subordinate predications

$$* \left\{ \begin{array}{l} \frac{X/X}{X/X} \\ \frac{X/X}{X/X} \\ \frac{X/X}{X/X} \\ \frac{X/X}{X/X} \end{array} \right.$$

$X/\overline{X}$	*right branch compound predication	B term consists of *one or more subordinate predication
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$$* \left\{ \begin{array}{l} \frac{X/X}{X/X} \\ \frac{X/X}{X/X} \end{array} \right.$$

$X \sqrt{X} X$	*bilateral double compound predication	both the A and the B terms of the main predication consist of *one or more subordinate predications
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<u>SYMBOL</u>	<u>MODIFICATION</u>	<u>EXPLANATION</u>
e.g.	$\left\{ \begin{array}{l} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} / \overline{\overline{X}} \\ \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} / \overline{\overline{X}} \\ \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \\ \overline{\overline{X}} / \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} / \overline{\overline{X}} \end{array} \right.$	
*	$\left\{ \begin{array}{l} \overline{\overline{X}} / \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \\ \overline{\overline{X}} / \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \\ \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \end{array} \right.$	
*	$\left\{ \begin{array}{l} \overline{\overline{X}} / \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} / \overline{\overline{X}} \\ \overline{\overline{X}} / \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \\ \overline{\overline{X}} / \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} / \overline{\overline{X}} \end{array} \right.$	
e.g.	mixed complex predication	various combinations of concatenation and compounding
*	$\left\{ \begin{array}{l} \overline{\overline{X-X}} \overline{\overline{X}} \overline{\overline{X}} \\ \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X-X}} \overline{\overline{X}} \\ \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \overline{\overline{X}} \end{array} \right.$	
RD*	Reported discourse marker	Ø predications which enter into constructions with basic and modified predications
AM*	Affect marker	

Table 2. Modification of predication types.

COMPARISON OF ORAL AND WRITTEN PREDICATION PROFILES

As a measure of underlying semantic complexity, the distribution of the number of predication types in the profiles clearly shows the written text to be more complex. There is a significantly higher ratio of multi-place predications (i.e. two or more place predications), to single-place predications in the written text than in the oral text: eighty-seven percent multi-place in the written text to forty-nine percent multi-place in the oral text. Correspondingly, there is a significantly lower ratio of single place predications to multi-place predications in the written text than in the oral text: thirteen percent single-place in the written text to fifty-eight percent single-place in the oral text.

It was assumed that concatenation might be an inverse measure

of underlying semantic complexity; that is, the more coordination present, the less complex the text. By that evaluation metric, the written text is judged more complex than the oral. However, the low overall instance of concatenation is puzzling and has been tentatively attributed to the disjunctive, truncated nature of the oral discourse, on the one hand, and to the paraphrasing potential, at times, to separate syntax from semantics, on the other hand.

oral: I don't know I I I don't know it's a hard decision to make but y'know like her parents I know they'll feel guilt

But is concatenated to segments not amenable to predication typing (e.g. false starts). The only utterance amenable to predication typing, "it's a hard decision to make," is paraphrased "It is defined as a decision having the property of being hard to make," symbolized $D_f / \overline{D}$, an instance of right branch embedding.

written: And then there's Dad who talks about (sic) he was the toughest kid on the block and no one would mess with him.

When paraphrased "And this is followed by Dad who says he had the property of being the toughest kid on the block which resulted in no one messing with him," symbolized $F_{\frac{1}{2}} / RD / \overline{D} / Rs$, an instance of double left branch compounding is revealed (cf. Table 2). Although syntactically the utterance illustrates coordination, semantically it illustrates embedding.

oral: They're not thinking about that and they're doing it
paraphrase: They're not concerned about that and they're accomplishing it.

schemata: $\overline{Cn} - Pf$ (cf. Table 2)

Perhaps it can be said that when syntactic concatenation can be reinterpreted through paraphrasing and predication typing as semantic embedding, a greater complexity is revealed than when syntactic concatenation, through paraphrasing and predication typing, yields semantic concatenation, since embedding implies subordination and concatenating implies coordination, the former deemed here a stronger measure of complexity than the latter. A definitive answer awaits further research.

The most compelling measure of underlying semantic complexity is that of embedding. Using this as a yardstick, the written data again is shown to be significantly more complex than the oral, representing a very high degree of hierarchically structured complexity: right branch and left branch compounding; bilateral double compound multi-right-branch and multi-left-branch compounding.⁷ Seventy-three percent of the written predication profiles are compound or bilateral double compound predications in contrast to only twenty-eight percent of the oral. The distribution of the sub-classifications of embedding shows a greater degree of complexity in the written text than in the oral:

	<u>*Oral</u>	<u>*Written</u>
Left-branch compounds	6%	21%
Right-branch compounds	15%	10%
Bilateral double compounds	7%	42%

* It should be remembered that fifty-eight percent of the oral predications were single place. Additionally left-branch compounding is postulated as a stronger measure of complexity than right-branch compounding since the secondary or subordinate idea(s) found in the dependent term(s) would precede the important or main idea in the independent term, cognitively a more difficult ordering to process. Finally it is held here that bilateral double compounding is the strongest measure of all.

Although the written data show twelve percent mixed complex predications profiles against seven percent in the oral data, the difference does not seem to be significant enough, in and of itself, to warrant giving much weight to it (for this data) as a complexity measure. However, coupled with the other evaluation metrics mentioned above, it does lend additional support to the written-more-complex-than-oral equation. Once more the heavy preponderance of single place predications in the oral discourse must be noted. In the written discourse, a possible explanation for the relatively low incidence of mixed complex profiles might be that the written expository genre being studied is that of young people whose writing styles may not yet be fully mature and thus not capable of sustained production of this order of complexity. The function of this category of predication types and its influence on underlying semantic complexity also deserve further study.

In assessing the relative complexity of the oral expository text and the written expository text, on the basis of number of predication types per profile, the extent of concatenation, the extent of embedding, and to a minor degree, the extent of combinations of concatenation and embedding, the written expository text is seen to have a more complex underlying semantic structure than that of the oral expository text.

NOTES

¹This discussion will follow the typology in Longacre, 1968 which distinguishes four major discourse genre: Narrative, Procedural, Expository, and Hortatory.

²The author is grateful to the students who, when asked to tape a "serious" conversation (which the author hoped, fortunately correctly, would elicit Expository genre), left a tape recorder plugged in on a table near the couch in the living room. They were earnestly discussing the Karen Quinlan case (whether or not to remove her from her life support systems, i.e. "pull the plug"), when one student flipped on the recorder. Although initially aware of its presence, "They," to use one student's words, "got so

wound up in the discussion, they forgot it was there."

³It is important to note here that unlike other discourse analyses which ask questions about paraphrasing, this research uses paraphrasing as an empirical tool to reveal meaning.

⁴Such multiple assignments were held to be consistent with the criterion of rough similarity of meaning.

⁵In keeping with the author's interest in expression of oral and expository thought, the research was limited to the investigation of content or discourse structure independent of syntax, save for peripheral use for finding units to be paraphrased (Hesch, 1981). Additionally, questions could be raised that other techniques to measure semantic complexity, e.g. speech acts, logical calculus, could have been used in this investigation. The former, the author believes, is applicable to dialogue analysis but not to expository analysis. The latter, being a closed, formal system, is also rejected since the author is not oriented toward formal, logical analysis but favors empirical and operational techniques. More detailed arguments could be made for not using other techniques and for choosing predication typing, but such a discussion is beyond the scope of this paper.

⁶Oral examples are distinguished from written examples by the omission of punctuation in the former.

⁷cf. Table 2 bilateral double compound predication

REFERENCES

- Garvin, Paul L., Jocelyn Brewer and Madeleine Mathiot. 1967. Predication Typing: A Pilot Study in Semantic Analysis. Language Monograph No. 27. Baltimore: The Linguistic Society of America at the Waverly Press, Inc.
- Hesch, June Iris. 1981. "A Structural Comparison of Oral and Written Expository Genre." Diss. SUNY at Buffalo.
- Longacre, Robert E. 1968. Discourse, Paragraph, and Sentence Structure in Selected Philippine Languages. Santa Ana: The Summer Institute of Linguistics.

VI

APPLICATIONS

CANADIAN ENGLISH: A LITERARY PICTURE FROM THE NOVELS OF THE 1970s

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Rex Wilson once wrote (1973) that dialect literature is a "two-way street". In other words, a linguistic background can lead to literary interpretation; in the other direction, literary analysis can enrich the linguistic scholarship. This is a study of that two-way street in twenty-five English Canadian novels of the 1970s.

The study finds that the two ends of this street don't meet as well as we might hope. In other words, scholarship on Canadian English and the literary picture of Canadian English don't seem to present the same dialect features, shibboleths and speech communities. This should both surprise and worry us.

1. A Fictional Encounter. Let us start with an example of dialect in a literary text. Alice Munro's Who Do You Think You Are? begins with the heroine's childhood in the small Ontario town of Hanratty. Rose eventually goes to university in western Ontario and meets Patrick Blatchford, a history student whose parents own a department store in British Columbia. As Rose and Patrick drift towards marriage, she nervously brings him back to Hanratty to meet her stepmother and a family friend.

The dinner with Flo and Billy Pope is awkward, and so is the conversation:

Rose tried to start some conversation, talking brightly, unnaturally, rather as if she was an interviewer trying to draw out a couple of simple local people. She felt ashamed on more levels than she could count....She didn't even have any way that she could talk, and sound natural. With Patrick there, she couldn't slip back into an accent closer to Flo's, Billy Pope's and Hanratty's. That accent jarred on her ears now, anyway. It seemed to involve not just a different pronunciation but a whole different approach to talking. Talking was shouting; the words were separated and emphasized so that people could bombard each other with them. And the things people said were like lines from the most hackneyed rural comedy. Wal if a feller took a notion to, they said. They really said that. Seeing

them through Patrick's eyes, hearing them through his ears, Rose too had to be amazed.

Who Do You Think You Are?
pp. 86-7

Even though no word is directly quoted in this awkward conversation its importance in Rose's thinking is clear from the narration. Rose can't decide who she really is, and Flo, Billy Pope and Patrick make decisions harder for her. Flo wants Rose's speech to sound as unapologetic as Billy Pope's imagined comment on the dinner, "We just set him down and give him some sausages, don't make no difference to us what he comes from!" (p. 86). On the other side of the table, Patrick listens suspiciously for indications that Rose cannot rise above the "Beggar Maid" origins which he had imagined. He doesn't mind romanticised, simple beginnings, but he wants assurance that Rose will leave them behind when she becomes the wife of a department store scion.

This scene from Who Do You Think You Are? obviously gives us more than a mere impression of "real" speech. In addition, it uses speech to reflect identities, conflicts and themes. Speech patterns help us to decide who the characters think they are-- and who we think they are.

Such a use of dialect in fiction is not unusual. We are familiar with the long traditions of so-called regional novels, especially in Britain and the United States. These traditions have engendered scholarship describing the novelists' techniques with 'eye dialect', their literary constraints, and even their authenticity.

The problem is, if we turn to the scholarship for some analysis of what Munro is talking about, we don't find much help. We find almost no research documenting Rose's problem: dialect choices which align the speaker with certain segments of Canadian society and thus act as shibboleths.

2. Canadian English. In fact, if we survey the scholarship on Canadian English, we find a considerably different kind of research. At the risk of oversimplification, we could say that this growing scholarship has had two overwhelming emphases to date. First, many studies have treated Canadian English as a dialect which must be distinguished from British and American English. This group of studies includes those which document the ebb and flow of British and American influences on Canadian English.

However, some scholars feel, as does G.M. Story, that "Canadian English is an illusion, and any attempt to impose a fictitious standard flies in the face of such regional speech as that represented in Newfoundland English usage" (1972:322).

They concentrate instead on regions as large as the "heartland" or as small as Newfoundland outports; they arrange much of their data to contrast province with province. From their data they hope to sift the dialect features characteristic of particular areas.

Although these two branches of the scholarship on Canadian English seem to grow in opposite directions, we can easily see that they share the same roots. They are both geographically based, and thus tend to emphasize regional divisions at the expense of other divisions within the country.

3. Canadian English in the Novels of the 1970s. With this scholarship as background, we can look at speech in Canadian fiction. In the doctoral dissertation upon which this brief paper is based (Tilly, 1980), I studied the dialogue, character comments and narrative comments on speech in Who Do You Think You Are? and twenty-four other Canadian novels published during the 1970s.

The corpus included several highly regarded and widely read novels (eg. Davies' Fifth Business, Richler's St. Urbain's Horseman and Laurence's The Diviners); it also included lesser known works (eg. Janes' House of Hate, Nowlan's Various Persons Named Kevin O'Brien and Dragland's Peckertracks). The latter were chosen so that the corpus would include a representative national sample with settings across the country.

The study found that--Newfoundland aside--there were relatively few dialect features which symbolized their speakers' identities as, for example, Quebeckers, Ontarians or British Columbians. Similarly, it did not reveal many shibboleths dividing areas within the provinces.

In contrast, finer analysis of important speech differences required a predominantly nonregional approach to four contrasts in speech communities and four corresponding themes.

First, novels from every region--including Newfoundland--contrasted rural and urban values, behaviour and speech. In fact, from a corpus of twenty-five, fourteen novels contrasted rural and urban speech. These novels reflect the trend to urbanization, an important change in Canadian society in the twentieth century. The novels show characters from Nova Scotia, Ontario and Alberta worrying about "country talk" and "city talk" and choosing--consciously or subconsciously, successfully or unsuccessfully--between competing models.

The dinner scene in Alice Munro's Who Do You Think You Are? illustrates this prominent theme and dialectal distinction. For Rose and for many other characters in English Canadian fiction, rural speech is shameful and ridiculous. Yet, alongside Munro's

Rose and Del Jordan, Davies' Boy Staunton, or Nowlan's Kevin O'Brien, all of whom reject their small town beginnings, there are others who retain the speech of Hanratty, Jubilee, Deptford and Lockhartville even when exposed to higher status alternatives. In other words, the novels don't contrast speech patterns of Hanratty, Jubilee, Deptford and Lockhartville; instead they suggest a rural/urban split in attitudes and habits which spans the country and which surfaces during many fictional migrations from country to city.

Next, Canadian novels often present a related theme: coming to terms with parents and inherited values, identities and social networks. As with the rural/urban distinctions, these relationships between generations are symbolized by the way people talk. Such distinctions are also prominent in over half the novels studied and in settings in every part of the country. In the East, House of Hate, John & The Missus and Various Persons Named Kevin O'Brien emphasize this theme and use dialect and slang to show the characters' attitudes and allegiances. Similarly, eleven novels set in Quebec and Ontario show generational conflicts played out through dialect and slang. And from the West, Judith, The Diviners and Peckertracks constantly use such speech variations.

In The Diviners, for instance, first Morag leaves Christy and Prin, then Pique must leave Morag and her "pretty funny expressions":

"Not right now, Pique. It's some kind of talisman to me
You can have it, though, when I'm through with it."

"Meaning what?"

"When I'm gathered to my ancestors."

Pique grinned.

"That's a new one in euphemism."

"It's not euphemism," Morag said, "and it's not new either."

"Well, I don't really think you'd want to part with it," Pique said, "but I thought I'd ask. It's okay. I hope I don't get it for a long time, then."

She shivered slightly, and her eyes darkened.

"Ma--"she added, "you'll take care, eh? You'll be okay?"

"Of course, I am okay."

And in a profound sense, this was true.

Pique put one thin brown arm around Morag's shoulders.

"So long, then."

"So long. Go with God, Pique."

"Ma, you have some pretty funny expressions."

"Now, then, don't I just?"

She watched while Pique walked across the meadow to the river and the boat. Then she walked back inside the house.

Late that afternoon, Morag heard the train whistle from

McConnell's Landing. The train was moving west.

The Diviners, pp. 367-8

Even a brief passage like this shows the constant and subtle inter-play between the generations, an interplay which pervades The Diviners and many of the novels of the 1970s.

Although the rural/urban and generational differences are prominent in our novels, they do not completely overshadow two other dimensions, namely social and ethnic differences. In fact, the latter themes dominate a handful of the novels in the corpus. Hugh Garner's The Intruders foregrounds class differences and social dialects; Mordecai Richler's St. Urbain's Horseman revolves around the identities of expatriate and stay-at-home Montreal Jews.

These two novels have much in common despite their different moods. Both divide their worlds into insiders and outsiders. Garner pictures misguided outsiders trying to enter Cabbagetown society; Richler presents an insider who thinks he wants out. In both settings--Toronto's Cabbagetown and Montreal's St. Urbain Street--distinctions between insiders and outsiders involve customs, values and speech.

4. Conclusions. What can we draw from these observations on speech in English Canadian novels of the 1970s? There appear to be implications for both literary and linguistic studies.

First we should note that the techniques and conclusions very briefly presented here do not take critics or students of literature away from their interests in theme, writing techniques or characterization. In other words, they do not invite the kind of reactions which literary critics sometimes have for linguistic approaches to their subject. On the contrary, the observations above suggest a sociolinguistic emphasis and a set of tools which can assist in the study of fictional societies. This approach emphasizes that the text is a "world" of speakers, a network of people with shared or diverse origins, socioeconomic status, age and values. It shows how the novelist's themes are reflected in characters' dialogue and in narrative comments; it also demonstrates how dialogue conveys those themes and interests to the reader.

Next, we can go in the other direction along Rex Wilson's two-way street and ask what implications these studies can have for scholarship on Canadian English. Our fiction provides us first of all with a list of dialect features which deserve investigation. These features don't seem to correspond closely to the phonological, lexical and grammatical variables which are most frequently studied in our scholarship.

For instance, characters in various novels repeatedly judge others according to whether they say he doesn't or he don't. This rather predictable variable seems to be far more indicative of who the characters think they are than does the question of whether they take nightcrawlers, earthworms or dewworms to the crick or creek. Admittedly this comparison is a trifle unfair: the grammatical choice occurs frequently whereas these lexical choices are rarely made by urban drawers of paychecks and hewers of grass. But there is a message here too, for this very point indicates why this grammatical choice is a preoccupation among Canadian literary characters and among Canadian people.

When we go one step farther along this road and categorize speakers' allegiances and habits on the basis of scenes such as the encounter from Who Do You Think You Are?, we come to an even more important suggestion for scholarship on Canadian English. The message is that we cannot afford to lump informants together solely on the basis of geography. We need much more sophistication than that, a sophistication which will not blithely ignore Rose's quandary or assume it has no real-life counterpart.

This is not to say, of course, that our novelists provide unerring guidance on Canadian English's dialect features and speech communities. Like anyone else, they can be victims of their own limited perspectives. Nevertheless, we have many perceptive writers who have created Canadian scenes involving insecurity, overcorrection, proud usage of nonstandard choices, linguistic "lames"--in short, all the complex tendencies which studies by Trudgill (1974), Labov (1966) and others have unearthed through sociolinguistic analysis in other settings. It makes sense to consider their perceptions on Canada's rural/urban, generational, social and ethnic diversity as we plan further studies on Canadian English.

Bibliography

- Labov, William (1966). The Social Stratification of English in New York City. Washington: Centre of Applied Linguistics.
- Laurence, Margaret (1974). The Diviners. Toronto: McClelland and Stewart.
- Munro, Alice (1979). Who Do You Think You Are? Toronto: Macmillan.
- Story, G.M. (1972). Newfoundland - English Usage. Encyclopedia Canadiana 7:321-2.

Tilly, G.A. (1980). Canadian English in the Novels of the 1970s.
PHD Dissertation, York University, Toronto, Canada.

Trudgill, Peter (1974). The Social Differentiation of English
in Norwich. Cambridge: Cambridge University Press.

A STRATIFICATIONAL VIEW OF CHIASMATIC STRUCTURES IN FRENCH AND ENGLISH

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An Englishman was walking south on State Street; a Frenchman was walking north. When he reached his destination, the Englishman said: *I passed a Frenchman on the way.* The Frenchman said: *J'ai croisé un Anglais en route.* And in the same way, to pass from English to French requires a crossing-over.

A chiasmatic structure is any structure which in translation displays a permutation of elements. When joined graphically to each other by two lines, those permuted structural elements, be they phonemes, morphemes, lexemes or sememes¹ create a configuration which resembles the Greek letter X (Chi).

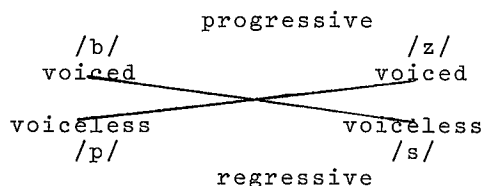
A stratificational contrastive study of English and French shows that chiasmatic structures are found at all levels of the language systems of the two languages and are much more common than one would expect. This chiasmatic view of French and English structures has an actual pedagogical value and can alleviate many of the problems encountered by students, teachers, translators.

I. PHONEMIC

Simple examples of such decussions are easily discerned at the phonemic stratum of both language systems. If we compare the two lexemes *E observe*/*F observe* in their pronunciation of the two graphemes *b* and *s* which appear in both words, we find that they are realized phonemically as /b/ and /z/ in English, while they are realized as /p/ and /s/ in French. We can identify the linguistic phenomena at play here as progressive assimilation in English and regressive assimilation in French. Considered in a parallel setting, the phonological patterning appears as such:

E	<i>observe</i>	/əbzərv /
		X
F	<i>observe</i>	/ɔpsərv /

And described in another fashion, the voicedness, voicelessness features of the phonemes appear as forming a phonological chiasmatic structure:



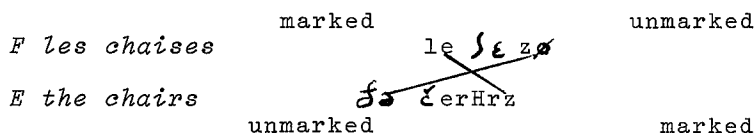
This is regular in French in all cases when the intervocalic cluster is made up of a bilabial stop followed by an alveolar fricative slit. Other examples in French are: *absurde*, *absoudre*, *absorber*, *absinthe*, *absolu*, *absorption* and of course all lexemes of the *observer* family: *observation*, *observance*, *observant*, *observatoire* and *observeur* and their English equivalencies. The English progressive assimilation seems to be optional in the case of *absurd*, which can be pronounced aebsard or aebzard.²

The same holds for *absorption*, *absolve*, *absorb*. In the lexeme E *absence*, the /s/ does not undergo progressive assimilation nor does it in the lexeme E *absolute* in which the *s* grapheme is realized as a voiceless phoneme. French shows exception to the regressive assimilation type when the first phoneme exhibits the voiced dental stop features. For instance, F *adsorber* is pronounced /adsɔrbe/ while in English *adsorb* can be pronounced either /aedsorb/ or /aedzorb/, the second undergoing the progressive assimilation /s/ > /z/.

The last example has a limited occurrence in both languages. It would explain why the analogical pronunciation has not been regularized in French phonology.

II. MORPHEMIC

If the phonemic strata of both languages afford us limited examples of phonological chiasmatic structures, their morphological strata are more populated with X chi type intersections. Thus the plural of all regular nouns exemplifies decussative permutations of morphological elements. In spoken French and English, if one says the following, one is again faced with a chiasmatic configuration in which the extremities of the X can be labelled marked and unmarked.



Another such instance appears in the translation of the comparative and superlative grades of adjectives:

F	<i>plus grand</i>	F	<i>le plus grand</i>
E	<i>tall - er</i>	E	<i>the tall - est</i>

A comparison of future, conditional and subjunctive paradigms of the verbal systems of both languages gives us another example of morphological chiasmatic structures:

F	<i>je réussirai</i>	F	<i>je réussirais</i>	F	<i>que je réussisse</i>
E	<i>I will succeed</i>	E	<i>I would succeed</i>	E	<i>that I may succeed</i>

The regular formation of adverbs is governed by a similar morphotactics in both French and English. Thus in a beginning French class, the students learn that to form an adverb in French, one adds the morpheme *-ment* to the feminine of the adjectival base. This means that *heureux* > *heureuse* > *heureusement* just as *happy* > *happily*. In such instances, no chiasmatic configurations are identifiable. Even in the case of light irregularities, such as *plaisant* > *plaisamment*, where we have the denasalization of the vowel before the addition of the adverbial bound morpheme *-ment*, no decussation occurs.

III. MORPHEMIC/LEXEMIC

However, there are cases when the English adverbial morpheme *-ly* cannot be rendered by the morpheme *-ment* in French. We must then have recourse to a chiasmatic structure in French to render the polymorphemic adverb:

<i>amusedly</i>	<i>urgently</i>	<i>contentedly</i>
<i>avec amusement</i>	<i>de toute urgence</i>	<i>d'un air satisfait</i>

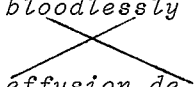
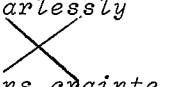
The reverse is also true, in which case it is the English morphotactics which acts irregularly, not allowing the *-ly* adverbial formation and necessitating a chiasmatic structure for its realization:

<i>difficilement</i>	<i>impunément</i>
<i>with difficulty</i>	<i>with impunity</i> ³

It should be noted that in these two examples both the

morphemic and the lexemic systems of French are involved in the translation of those polymorphemic adverbial lexemes in English.

One can say that a morphological chiasmatic structure as in the above examples must be used in the translation of English polymorphemic lexemes into French because French morphotactics does not permit the piling-up of bound morphemes at the end of a base as readily as does English morphotactics. The bound morphemes of English are therefore realized as free morphemes or lexemes in French which must then follow French lexotactics. For this reason one must translate:

<i>bloodlessly</i>	<i>dustiness</i>	<i>fearlessly</i>
		
<i>sans effusion de sang</i>	<i>état poussiéreux</i>	<i>sans crainte</i>

In the above examples the relationship involves the interplay of both the morphemic and lexemic systems of the two languages, illustrating the fact that there does not necessarily exist a one-to-one correspondence between the morphemic strata of L_1 and L_2 and that some bound morphemes of English must be rendered by lexemes in French, creating a chiasmatic structure in the process.

IV. LEXEMIC

At the lexemic level, we also find a great number of chiasmatic structures. Some of those decussations are due solely to a different lexotactics of both language systems without sememic implications. Such is the case of the position of adjectives of color, which, while they precede the noun in English e.g. *the green car*, follow the noun in French, e.g. *la voiture verte*. Saying *la verte voiture* would not in any way affect the meaning of the structure.

In some cases the ante-position of the adjective of color has a stylistic value. The same is true of long descriptive adjectives which follow the noun in French but precede it in English. For example, *the interesting book* and *le livre intéressant*.

Comparison of the word order of object pronouns in French and English gives us a number of uni-stratal chiasmatic structures. In this case, the lexemes have exactly the same sememic value: *I love you/je t'aime*.

When two object pronouns are involved in the English structure, if both pronouns are of the third person singular or plural or both, the two pronouns are placed in front of the verb in French, forming a decussation. But when the decussation is operated, they retain the order in which they appear in English, i.e. direct object before indirect object.

I give it to him.

Je le lui donne.

I give it to them.

Je le leur donne.

But if the pronouns are of different persons, then in translation from English into French, we have a double inter-crossing of elements, one involving the flip-flopping of the pronouns and the verb:

He gives it to us.

**Il le nous donne.*

and one involving the decussation of the two pronouns:

**Il le nous donne.*

Il nous le donne.

The comparison of the position of adverbs in English and French also reveals a different lexotactics in the two language systems, causing a chiasmatic structure in translation: *He speaks French well/Il parle bien le français* and *She always works hard/Elle travaille toujours fort.*

The same is true of relative clauses where the chiasmatic structure is due purely to a different lexotactic in French and English.

Inversion mandated by the opening words of a sentence in French, such as *peut-être*, *aussi*, *du moins* and *sans doute* forms a criss-cross in translation:

Peut-être viendra-t-il.

Maybe he will come.

Aussi sommes-nous prêts.

Therefore we are ready.

There are also cases in which a change in grammatical category of one of the elements decussed does occur:

Since 1952, our foreign trade has improved steadily.

Depuis 1952,

notre commerce avec l'étranger n'a cessé de s'améliorer.

Here the adverb *steadily* becomes the verb *n'a cessé de*.

V. LEXEMIC/SEMEMIC

In the case of polysemous adjectives in French, the most common meaning of the adjective (concrete) is translated via a chiasmatic structure, while the other (abstract) meaning follows the same word order as in English.

the tall man

the great man

l'homme grand

le grand homme

the poor man

the poor (wretched) man

l'homme pauvre

le pauvre homme

In the above examples, the relationship between each pair of structures involves the interplay of both lexemic and sememic systems of the two languages. As will be seen in the following, this is often the case in the translation of L_1 into L_2 and an important source of chiasmatic structures between the two language systems.

Because of a discrepancy between the sememic value of French and English prepositions⁵, the French preposition being more sememically depleted and never carrying the sememe 'displacement', a chiasmatic structure results in the translation of the French preposition into English.

he ran downstairs

il a descendu l'escalier en courant

'direction' 'inferiority' 'displacement' 'motion/means'

a descendu

en courant

In the above example, 'direction', 'inferiority' and 'displacement' are realized in the verb, whereas 'motion/means' is realized by *en courant*. The verb *courir* and the preposition *en bas* cannot be used to translate

run and down. The motion of running is translated by either *courir* or *en courant*, the former when no 'displacement' is intended, e.g. *allons courir*; the latter when a verb of 'displacement' occurs. One way of expressing the 'direction' as realized in *down* is *en bas*, but this latter shows no displacement and in French necessitates a verb.

One can therefore say that when the sememes 'inferiority', 'direction' and 'displacement' are present in the English preposition, it must be translated by a verb of displacement in French and that the verb of motion in English must be realized in French by a prepositional phrase placed in final position in the sentence. It is because the French preposition never carries the sememe 'displacement' that at the lexemic level the meaning of the English structure must be realized in a chiasmatic structure.

To translate a temporal clause of the type *I have been studying French for two years*, one can use a chiasmatic structure and say: *Il y a deux ans que j'étudie le français*, or follow the English lexotactics and say: *j'étudie le français depuis deux ans*. In this case, the chiasmatic structure is optional and therefore of a stylistic nature. This holds in all cases when the amount of time involved is not measured in hours, but in months, years, minutes or seconds.

When dealing with the word *heure*, because of its polysemous value (meaning both 'hour' and 'o'clock'), the use of a chiasmatic structure becomes obligatory in order to render the sememic difference between *I have been waiting for 2 hours*/*Il y a deux heures que j'attends* and *I have been waiting since 2 o'clock*/*j'attends depuis 2 heures*.

The pair of sentences *He is sure to come* and *He is sure he can come* also affords us with a case in which the untutored student, not using a chiasmatic structure in the translation of the first sentence will destroy the subtle sememic opposition which exists between the two English structures. The correct translations read:

He is sure to come.

He is sure he can come.

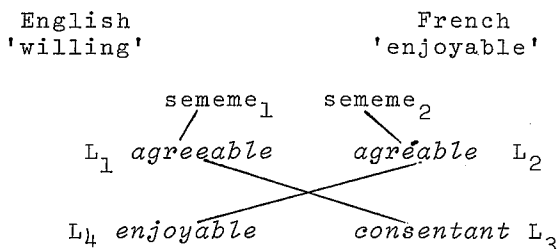
Il viendra sûrement.

Il est sûr de venir.

VI. SEMEMIC

Chiasmatic structures at the purely sememic level are

best illustrated via Misleading Transfer Items⁶ which exemplify a contrast in speech direction, such as *E agreeable/F agréable*, which do not translate each other, but when graphed, show a cross-relationship.



Many more examples of chiasmatic relationships existing between the French/English lexicon because of a discontinuity in the sememes can be cited. A few are: (English, then French): *marry/marier, sympathetic/sympathique, complaint/complainte, facile/facile, humor/humeur, miserable/misérable, passible/passible, placable/placable, relax/relaxer, host/hôte*.

VII. IDIOMS

Lexemic idioms of the type labelled Irreversible Binomials by Makkai (Idiom Structure in English, 1972) are not immune from chiasmatic change. It is interesting to observe that, while being irreversible in French and English, in a monolingual setting these idioms become reversible in translation.

<i>from top to bottom</i>	<i>come and go</i>	<i>from head to foot</i>
<i>de fond en comble</i>	<i>va-et-vient</i>	<i>des pieds à la tête</i>

Other examples (English, then French) are: *eat and drink/boire et manger; light and shade/ombres et lumières; red, white and blue/bleu, blanc, rouge; safe and sound/sain et sauf; the whys and the wherefores/les comment et les pourquoi*.

Another category of idioms, identified as Sememic Idioms by Makkai, also exemplifies chiasmatic change:

<i>He had a narrow escape.</i>	<i>To kill 2 birds with one stone.</i>
<i>Il l'a échappé belle.</i>	<i>Faire d'une pierre 2 coups.</i>

To rob Peter to pay Paul

Découvrir saint Paul pour couvrir saint Pierre

VIII. MORPHEMIC/LEXEMIC/SEMEMIC

Thus far it has been shown that chiasmatic relationships exist between French and English within each strata and also between two strata. It can also be shown that some chiasmatic structures can be tri-stratal: such is the case in the translation of *E I miss you* into *F tu me manques*.

By analogy with *I love you/je t'aime*, *I miss you* will be translated by the untutored student as **je te manque*, which translates *you miss me* instead of *I miss you*. This latter is correctly translated by *tu me manques*. Here the problem stems from the fact that *to miss* in English governs a direct object, while it takes an indirect object in French. Thus *I miss you* means **tu manques à moi*. But it also stems from the fact that *miss* conveys an active aspect in English, but a passive aspect in French, while at the same time exhibiting the surface structure qualities of an active verb.

If we compare *you are loved by me/tu es aimé de moi* (passive) with *I love you/je t'aime* (active), we expect by analogy *you are missed by me* to give **tu es manqué par moi* and *I miss you/je te manque*, but we have instead *I miss you/tu me manques*.

To translate *I miss you* by *tu me manques*, a student or translator must delve into the tactics of three different strata: 1) the morphemic stratum, to select the correct subject and object pronouns, i.e. *you* (direct object) becomes *tu* (subject) and *I* (subject) becomes *me* (indirect object). He must also scrutinize the morphotactics of French for the right form of the verbal paradigm *manques*.

2) The lexemic stratum and its lexotactics will give him the right word order realized in a double chiasmatic structure:

I miss you

Tu me manques

3) The sememic stratum and its semotactics will reveal the sememes: 'passivity' and 'indirect transitivity' contained in the French verb *manquer* when the object of

manquer is an animate. But if the object of *manques* is an inanimate, its lexotactics parallels that of *miss*. Thus one translates *I missed the bus* by *j'ai manqué l'autobus*, where no decussation takes place, since in this case the morphotactics, lexotactics and semotactics of French and English correspond to one another.

It is interesting to see that chiasmatic structures between French and English exist at all levels of the linguistic system. Some are uni-stratal, some are bi-stratal and others are tri-stratal.

Implications are that in a stratificational view of bilingualism, one cannot deal only with a comparison of the relationships which exist between L_1 and L_2 on a horizontal plane, but that one must also take into consideration the verticality of the relationship which takes place in the encoding-decoding processes.

The practical pedagogical significance of such an approach to the teaching of French and English goes without saying. Once students have been made aware of the frequency of the occurrences of chiasmatic structures at all levels of the linguistic system, their task is greatly alleviated.

In translation, as in the acquisition of another language, "everyone has his own cross to bear". This study has aimed at rendering this fact even more obvious, and has possibly also made the cross lighter.

FOOTNOTES

1. For the phoneme-morpheme-lexeme-sememe distinction and definition of these terms, see Lamb (1966), Lockwood (1972), Makkai (1972) and Makkai and Lockwood (1973).

2. See *The American Heritage Dictionary of the English Language* for the dual pronunciation of these lexemes.

3. Some chiasmatic structures can be neutralized, for instance French can also say *avec impunité*.

4. In his article "The Stratification of Bilingualism", Paradis (*Third LACUS Forum*, 1976) deals with the horizontal or mono-stratal comparison of the linguistic system of a predominantly compound or subordinate bilingual. He neglects the vertical comparison of the linguistic system of those speakers-listeners as well as the bi-stratal and tri-stratal interplay which occurs in bilingualism.

In "The Transformation of a Turkish Pasha into a Big Fat Dummy", Makkai (1971 and 1973) addresses the verticality of bilingualism as the inter-stratal relationship which occurs in translation, but deals more with cultural rewriting than with literal translation.

5. cf Garneau, *The Fourth LACUS Forum* (1977).

6. cf Garneau, *The Second LACUS Forum* (1975) where some of the Misleading Transfer Items studied here are considered under the heading Contrasts in Speech Direction.

REFERENCES

- Garneau, Jean-Luc. 1975. "Anglo-French Misleading Transfer Items: A Semantic Analysis". *The Second LACUS Forum*. Hornbeam Press, South Carolina.
- Garneau, Jean-Luc. 1977. "French and English Prepositions: A Bi-Stratal Study". *The Fourth LACUS Forum*. Hornbeam Press, South Carolina.
- Lamb, Sydney. 1966. *Outline of Stratificational Grammar*. Georgetown University Press.
- Lockwood, David G. 1972. *Introduction to Stratificational Linguistics*. Harcourt, Brace and Jovanowich, Inc., New York.
- Makkai, Adam. 1972. "Idiom Structure in English". *Janua Linguarum, Series Maior*, Volume 48. Mouton, The Hague.
- Makkai, Adam and D. Lockwood. 1973. *Readings in Stratificational Linguistics*. The University of Alabama Press, Alabama.
- Paradis, Michel. 1976. "The Stratification of Bilingualism". *The Third LACUS Forum*. Hornbeam Press, South Carolina.

LINKING PHENOMENA, INTONATION AND FRENCH SYNTAX:
THE OUTLINE OF A PEDAGOGICAL NORM

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A pedagogical norm defines a type of pronunciation which is more uniform than that of natural speech, and as such, easier to learn. On the other hand it does not offend educated speakers of the language and will not inhibit the acquisition, ultimately, of the orthoepic norm or of the full range of variation displayed by educated native speakers.

(Valdman 1976:61)

The examples given in this paper are meant to document the details of a pedagogical norm for French linking and intonation suitable for presentation to the beginning student. The principles outlined in the conclusion will be applicable to other types of sentences such as commands and questions which differ from declarative sentences by their final contours. A pedagogical norm is by definition a simplification of the full range of natural language phenomena, the advanced details of which must be learned from observation within the context of language use. As a norm, it is a framework upon which refinements will be made. As a pedagogical object, it must be communicable to the student. This study will be devoted to determining the proper reading of a fairly straightforward declarative sentence on the assumption that if students can determine the appropriate reading of grammatically correct written sentences as they encounter them, then they can transfer this analytic ability to other situations and ultimately make it automatic in their spontaneous usage of the language.

A sentence is a syntactic unit within which can be recognized words in specific relationships resulting in a meaning. The crucial relationships which a beginning student must be able to identify are those of subject and predicate, of verb and object, and of modifier and head. The student must also be aware of any redundant or extraneous elements in a sentence. Of course one must know or be able to guess the meanings of the words in order to parse a sentence. This effort will be guided by the student's knowledge of morphology and of the rules of sentence structure and by an awareness of what goes on in the world in general.

Even when a student "understands" a sentence, saying it is not easy. The words in a French sentence are not enunciated one by one. They can not and do not stand as discrete entities because linking phenomena affect their syllable structure and obliterate word boundaries. Two phonological processes act to maximize the number of CV syllables in a given sentence. These processes have different domains of application which can be identified syntactically.

The first process, enchaînement, carries the final consonant or consonants of a word to the first syllable of a following vowel-initial word. Enchaînement may operate at all points within the sentence from between two words within a single constituent, as shown in (1) even to between such major constituents as two independent clauses, as shown in (2) (although here it might be made optionally).

(1) Voilà la table ou il travaille, cette table ouverte. [ta\$ blu]

(2) Dis, tu cherches la table, ou tu cherches la chaise? [ta\$ blu] [ʔtabl\$ u]

In principle, enchaînement is made whenever its phonological criteria can be satisfied within a given sentence. It affects only those consonants which are always pronounced, but not what are often called the "silent" consonants of French. Enchaînement cannot extend beyond the end of a sentence, as shown in (3). Thus it is a unifying marker for the sentence as a whole, and a delineator of the sentence boundary as well.

(3) Voilà la table. Ou il travaille, je ne sais pas. [tabl\$ u] [*ta\$ blu]

Although it is not usually called enchaînement, an advancing of a word-final consonant to a consonant-initial word is also possible in French as long as the consonants involved create a natural syllable shape of decreasing strength, such as the one shown in (4). (See Delattre 1940 for a discussion of increasing and decreasing consonant tension in these clusters.)

(4) model syllable division: couplet [ku\$ ple]
consonant advancement: coupe-les [ku\$ ple]

The second phonological process which occurs before a vowel-initial word is called liaison. Liaison involves only a single word-final consonant, and the consonant must be "silent" in sentence-final position. This consonant is actualized and carried forward to the following vowel-initial word. Liaison can only be made if the requisite phonological environment is present, but it does not occur wherever its environment is found. Its occurrence is restricted by many factors, and in particular, the degree of formality. It is not always predictable as it has become lexicalized in numerous

expressions which must be learned by rote. There are many structures in which liaison is optional, but it is possible to identify certain grammatical structures where it is obligatory. Liaison is, with one exception, blocked between the major constituents of a sentence. Within the Noun Phrase (NP), it is required between the head noun and any and all of its preceding determiners or modifiers, these being articles, adjectives, and the majority of monosyllabic adverbs that may precede the adjectives, as in (5). (Liaison is optional after the adverbs PAS, TROP, and FORT (Carduner and Hagiwara 1979:26).)

- (5) les autres très importants amis africains
[le\$zotr\$tre\$zẽ\$por\$tã\$zã\$mi\$ã\$friskẽ]

Within the Verb Phrase (VP), liaison is required between the verb and all clitic pronouns, as in (6).

- (6) Ils en ont. Ont-ils?
[il\$zã\$no] [õ\$til]

(In the phrase structure analysis used here, clitic pronouns are included in the VP rather than in the NP because they are mobile, unstressable, and cannot be separated from their verb. Other pronouns, such as PLUSIEURS or AUCUN that can be stressed and that cannot occur post-verbally are found in the NP; these do not link to their verb (Anderson, 1975).) The clitic, linkable pronouns are solidly bound to their verbs. The determiners and pre-nominal adjectives may also be considered to be in a clitic relationship which is characterized by this "syntagmatic solidarity" (Dumas 1978: 83,90) and it is only words in this relationship which are obligatorily linked. Proper nouns and common nouns do not link to their verbs.

A few other basic structures also have a strong syntagmatic solidarity and in a pedagogical context may be said to link obligatorily. Within a Prepositional Phrase (PP), liaison occurs if the preposition is monosyllabic, as in (7), but not if it is polysyllabic, as in (8). Within the VP, if the verb is ETRE, the cop-

- (7) dans un jour (8)*pendant un jour
[dã\$zẽ\$3ur] [pã\$dã\$ẽ\$3ur]

ula, and the subject is third person, liaison occurs between the verb and what follows; as in (9). Otherwise, liaison between the verb and its object or adverb is blocked, as in (10).

- (9) C'est une amie. (10)*Il voit une amie.
[se\$ty\$na\$mi] [il\$vwã\$y\$na\$mi]

Liaison is blocked by the conjunction ET 'and'; it is optional after other monosyllabic conjunctions and blocked for all others. In contemporary speech patterns, liaison does not occur in any other environments; it is restricted to the individual NP, VP or PP. Thus, liaison delineates and differentiates the sen-

tence components while enchaînement, whose domain is the entire sentence, functions as a link between these components. Neither liaison nor enchaînement can operate between sentences; the sentence forms a natural group.

In addition to the phonological linking phenomena discussed above, there are grammatical relationships of concord which provide links between the NPs and VPs and also between the nouns and their modifiers. Nouns cause their modifiers and determiners to agree in both number and gender. The verb agrees in person and number with its subject. In certain situations there are agreements between objects and their governing verbs, but these appear primarily in written patterns.

The basic link between the subject NP and the VP, marked by agreement through the person/number ending of the conjugated verb form, is cemented by the intonation pattern of the declarative sentence. This contour can be described using the four phonemic pitch levels identified by Delattre (1966) shown in Figure 1. Malécot has extended Delattre's analysis by fitting the basic contours into the tessitura, the melodic range of the normal speaking voice (1977:20). According to Malécot, a contour which descends to a pitch level lower than the tessitura's lower limit denotes sentence finality, while pitches within the tessitura denote continuation.

FIGURE 1. Delattre's basic contours and their allophonic variants (1969:12)

Minor Continuation /2-3/ [2-3] [3-2]	Major Continuation /2-4/ [2-4]
Finality /2-1/ [2-1]	Parenthesis or Echo /1-1/ [1-1] [2-2] [3-3] [4-4]

The French declarative sentence begins at pitch 2, the lower limit of the tessitura, and unless the sentence is extremely short, it can be expected to have the rising-falling pattern shown in (11). A one-syllable NP (a proper noun is the only possibility), or a clitic pronoun subject incorporated into the VP, or a single word or phrase which is in fact a fragment answering a question can appear with only the one required contour of a declaration, the falling 2-1, as in (12) (Carduner and Hagiwara 1979:53; Valdman 1970:180). A short negative declarative sentence may have a falling contour, but if PAS is emphasized, there will be a rising-falling contour with the peak on PAS, as in (13) (Valdman 1970, 192). (11) Jean-Pierre vient.

2.....3 2...1

(12) Georges vient. Il vient. (Qui vient?) Georges
2.....1 2.....1 2.....1

- (13) Il n'est pas parti.
 2.....1 (non-emphatic negative)
 2.....3 2...1 (emphatic negative)

Adverbials or prepositional phrases at the beginning of the sentence receive 2-3 contours, as in (14), and the NP can be distinguished from them by the use of a 2-4 contour, provided that the sentence itself requires more than a single 2-1 contour, as in (15). (A PP that modifies a noun follows it and is part of the NP.) The use of the 2-4 contour where it is not warranted by the presence of introductory material is perceived as contrastive, as in (16).

- (14) Généralement, il vient.
 2.....3 2.....1
 (15) Généralement, en hiver, il vient avec ses enfants.
 2.....3 2.....3 2.....4 2...1
 (16) Jean-Pierre vient.
 2.....3 2...1 (neutral statement)
 2.....4 2...1 (subject contrast)

The final element of a declarative sentence always receives the 2-1 contour. This element may be the verb or its object or an adverbial or a PP. The balance of the sentence is rising in Delattre's analysis. The long rising portion may be subdivided, and a subdivision of the rising portion may optionally have a falling variant if it is followed by a rising element with which it forms a group. Since the verb and its object belong to the same VP constituent, for example, the verb receives the 2-3 contour (which has allophones of the [2-3] and [3-2] variety) and the object the 2-4 one where another element follows them, as in (17).

- (17) Il a perdu sa valise dans le train.
 2.....3 2.....4 2.....1 (neutral)
 2.....4 2.....1 (object)
 2.....4 2.....3 2.....1 (verb)

In a sentence such as (17), the neutral reading may be altered if the 2-4 contour falls on a different constituent such as the verb, or if the rise to pitch 4 follows a prolonged pitch 2 segment. If, however, there is an introductory segment, then that same pitch may be neutral or contrastive, as in (18). (See Valdman 1970: 189 for a discussion of this point in a slightly different manner.)

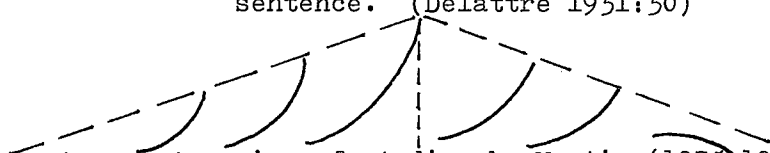
- (18) Ce matin, il a perdu sa valise dans le train.
 2.....3 2.....4 2.....1

In complex sentences, the intonation peak, the 4 of the major continuation, will fall on the last syllable of the first complete clause, as in (19) (Valdman 1970:343).

- (19) Il était chez ses parents
 2.....3 2.....4
 quand nous avons téléphoné.
 2.....3 2.....1

As a sentence becomes longer and increases in complexity, the number of continuation contours increases accordingly. Each rising contour starts at a pitch at or slightly below the end point of the previous one and continues to a pitch slightly higher than the previous end-point until all the divisions before the peak have been made. This yields a succession of allophonically different contours of the 2-3 minor continuation type and one major 2-4 continuation. If the major continuation is not on the penultimate unit, additional 2-3 contours may follow, as illustrated in Figure 2. The major continuation marks the division between clauses, as in (19) or it falls on the penultimate constituent of a simple sentence with a neutral reading, as in (17).

FIGURE 2. Rising intonations in a declarative sentence. (Delattre 1951:50)



A recent series of studies by Martin (1975,1978) has refined our understanding of the differences among the rising contours themselves. Martin's analysis reveals which factors change in these contours as they are applied to ever smaller components of a sentence and also what slopes of the same or of inverse direction indicate. His feature matrix appears in Figure 3.

FIGURE 3. Martin's distinctive features for intonation contours (1978:98,115)

	C ₀	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C _{dec}	C _{int}	C _{imp}
long	+	-	-	-	-	-	-	+	+	+
rising		+	+	+	+	+	+	-	+	-
ample		+	+	-	-	-	-	-	+	+
restrained				-	-	+	+			

Martin's analysis shows that inverse slopes mark the inclusion of a unit into a superior one (1975:43-4). In this way the global rising-falling contour of the declarative sentence unites the NP and VP. Slopes of the same direction separate components if the range of the second shows a decrease as compared to the first. An adverbial or PP preceding the NP subject would be separated from it in this manner, as in (20). The separation of components would be perceived whether the second component were rising or falling (Martin 1978:48).

(20) Ce matin, Jean-Pierre a perdu sa valise.

C₁ C₃ or C₂ C₁ C₀(decl)
 [2+3] [2-3] or [3-2] [2-4] [2-1]

Given any two successive contours, the second completes a unit if it reverses direction or if it increases in amplitude. Thus, in (17), SA VALISE, which reaches 4,

he does treat redundancies.¹ According to Martin, the C_1 contour is used if the repeated presupposed material precedes its normal place of mention in the sentence, as in (28) (1978:117). The C_0 contour is used if it follows its mention, as in (29).

(28) A Venise Marie elle y est allée.

C_1 C_1 C_0

(29) Pierre l'a vue, Marie.

C_0 C_0

Although there are discrepancies among the descriptions of intonation in the literature, it is possible to establish a pedagogical norm for linking and intonation using a combination of findings including my own. For the student, it can be said that certain factors are particularly important for the production of an intonation contour. Whether a contour remains within the confines of the tessitura or surpasses either its upper or lower limit is significant since a sentence is perceived as being terminated if either limit is exceeded. The melody of the contour, which may be rising, falling, or interrupting, is crucial. The final variable of an intonation contour which the student must control is its range: a given contour is more wide-ranging, less wide-ranging or of the same range as the one it immediately follows.

Contours must be applied to entire constituents. These may be recognized by a combination of morphological clues and by punctuation marks. For example, a PP begins with a preposition, an adverb usually ends in -MENT. Either is separated from the following NP by a comma. The subject NP is either a proper noun or a noun preceded by a determiner which must be the first element of the NP, whatever its complexity. The subject is not marked by punctuation. The VP contains the conjugated verb that agrees with the subject. It may be followed by other NPs which are its objects or by adverbs or PPs. (If the verb requires an indirect object, it will be followed by a PP which will be non-adverbial in nature.) The division between the verb and its objects or modifiers is unmarked by punctuation. Sentence interruptions will be marked by commas. Any material surrounded by commas will require its own contour.

The basic pattern for a declarative sentence is a series of rising contours ending with a single falling one. Each unit receives its own contour, assignable

¹As for interruptions, Martin states that they are characterized by a more rapid rhythm and a lessened intensity on a contour whose last unit repeats the contour just previous to the beginning of the interruption (1975:56).

as follows: an adverbial or PP which precedes the subject receives a 2-3 contour. The NP subject also receives a 2-3 contour, but one which is less wide than the preceding modifier. The VP will continue to rise if it is complex; it will be wider-ranging than the NP, that is, 2-4. The final element of the sentence, which may be the verb in a simple VP, an object, or any modifying structure in that position will receive the falling 2-1 contour. A review of the examples cited in the earlier portion of this paper shows that the shape of the contour can be determined rather simply, and this was the purpose of my study. A sentence composed of a VP alone or of a short NP and a verb requires only a 2-1 contour. A sentence with two or more major units (NPs, VPs, PPs) has a rising-falling pattern which peaks on the penultimate unit unless PAS is present, in which case the peak is on PAS. A complex sentence containing more than one NP-VP pairing has its major peak on the last unit of the first clause and a minor peak on the penultimate unit of the final clause. Any extraneous or pre-supposed material receives a non-continuing contour. Any units which have the same function, such as a list of adjectives, repeat contours, although the last member of the enumeration will have a wider contour than the others if the list is mid-sentence. A sentence is read neutrally if the contour remains in the lower portion of the tessitura (2-3) or if the peak is on the penultimate unit in a simple sentence. A 2-4 contour elsewhere in a simple sentence is perceived as contrastive. A [3-2] variant of the /2-3/ contour may be used to vary this pattern as long as the unit receiving the [3-2] forms a logical larger unit with what follows it.

The same units which must be identified for intonation are relevant for liaison. Liaison is restricted to the elements within a single contour unless the verb ETRE is present and has a third person subject. All words in a NP that precede the noun should be linked. All clitic pronouns should be linked to the verb in the VP. ETRE links to what follows, and prepositions and conjunctions link if they are monosyllabic, except for ET. In contrast to the restrictions placed on liaison, enchainement is made wherever possible.

So, in summary, it can be said that the principal syntactic components of a sentence are united by enchainement and by the rising-falling intonation pattern, while the units which make up the sentence are kept distinct by their individual contours and by the constraints on liaison which can not join them. The major units can be identified morphologically and the intonation contour for each unit can be determined by examining its relationship with the one it immediately follows.

BIBLIOGRAPHY

- Anderson, Shannon L. 1975. On the syntax of liaison. *FRENCH REVIEW* 43:848-55.
- Carduner, Sylvie and M. Peter Hagiwara. 1979. *D'ACCORD: La Prononciation du français international--acquisition et perfectionnement*. Vermont: Blue Cinder Publications, Inc. 303 pages.
- Delattre, Pierre. 1940. Le mot est-il une entité phonétique en français? *LE FRANÇAIS MODERNE* 8:47-56.
- 1951. *PRINCIPES DE PHONETIQUE FRANÇAISE A L'USAGE DES ETUDIANTS ANGLO-AMERICAINS*. Second edition. Middlebury, Vermont: Ecole Française D'Eté, Middlebury College.
- 1966. Les dix intonations de base du français. *FRENCH REVIEW* 40:1-14.
- 1969. L'intonation par les oppositions. *LE FRANÇAIS DANS LE MONDE* 64:6-13.
- Dumas, D. 1978. La querelle des abstraits et des concrets, ses a priori idéologiques et la liaison de pluriel en français contemporain. In Cornulier and Dell, eds. *ETUDES DE PHONOLOGIE FRANÇAISE*. Paris: Editions du Centre National de la Recherche Scientifique, 83-106.
- Malécot, André. 1977. *INTRODUCTION A LA PHONETIQUE FRANÇAISE*. The Hague: Mouton. Series Didactica, 15. (reworked from articles in *PHONETICA*)
- Martin, Philippe. 1975. Analyse phonologique de la phrase française. *LINGUISTICS* 146:35-68.
- 1978. Questions de phonosyntaxe et de phonosémantique en français. *LINGUISTICAE INVESTIGATIONES* 2:93-126.
- Valdman, Albert. 1976. *INTRODUCTION TO FRENCH PHONOLOGY AND MORPHOLOGY*. Rowley, Mass.: Newbury House.

APPENDIX: GUIDELINES FOR THE STUDENT

Identify the basic units. A PP begins with a preposition, an adverb has a -MENT ending, a NP begins with a determiner if it is not a proper noun, a VP contains the conjugated verb which agrees with the subject. The NP before the verb is the subject. The others are objects and part of the VP. Make liaison within the units.

Assign a contour. For a VP alone or a short NP and a verb: 2-1. For two or more major units: rising-falling with peak on the penultimate unit or PAS. For a complex sentence (with more than one NP-VP pairing): a major peak on the last unit of the first clause; a minor peak on the penultimate unit of the final clause. Increase the range or reverse direction on the second unit to combine it with the first. Decrease the range on the second to separate it from the first. Repeat the range if the units are equivalent.

Use enchaînement and consonant advancement wherever possible to maximize CV syllables.

ETUDE SUR LE FRANCAIS DES DIPLOMES DE "L'IMMERSION TARDIVE"

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Dans cette communication, nous voudrions (1) présenter certains résultats d'une étude sur l'évaluation du français d'un groupe d'étudiants qui ont suivi des programmes dits "d'immersion tardive" et (2) exposer certaines de nos observations sur l'utilité de certains types de tests et autres mesures de compétence linguistique.

Afin de rendre nos mesures d'évaluation du français de nos sujets plus compréhensibles, nous présenterons lorsque possible, des données comparables provenant de groupes témoins. Nous verrons aussi que certaines données sur l'anglais de nos "immergés" permettent une comparaison, directe ou indirecte, avec le français de ces mêmes sujets. Nous disposons de données quantitatives et qualitatives, c'est-à-dire qu'à certains moments, nous décrirons le français de nos sujets par la présence ou l'absence de certaines caractéristiques. En d'autres temps, ce sont des écarts importants de résultats quantifiés soit entre, soit à l'intérieur même des groupes de sujets qui fourniront des indices de niveaux différents de français représentés.

Commençons par un premier indice de compétence relative en français, indice qui présente les avantages de la simplicité et, dans notre cas, d'une comparaison immédiate entre plusieurs groupes comparables de non-francophones : l'auto-évaluation. (Nous verrons plus loin avec quelles autres mesures l'auto-évaluation est en corrélation significative).

Cziko et coll. (1978) ont mis au point un questionnaire d'auto-évaluation qu'ils ont fait remplir par 17 élèves en onzième année ayant suivi un programme d'immersion précoce, et par 21 témoins anglophones de la même année qui n'avaient suivi que les cours obligatoires d'anglais langue seconde. Nous avons emprunté leur échelle d'évaluation sans la modifier, afin de permettre une comparaison directe entre nos groupes de non-Francophones et les leurs. Le questionnaire demande au candidat de décrire ses capacités en français en cochant un des neuf espaces pour chacune des quatre questions. Les espaces représentent, de gauche à droite, différents degrés de compétence linguistique, étiquetés par exemple, à l'extrême gauche, "not at all", et à l'extrême droite, "like a native speaker". Chaque question aborde une des 4 fameuses "habiletés" pour l'utilisation d'une langue étrangère. Ainsi, le tableau A présente les résultats de l'auto-évaluation de cinq

groupes de non-Francophones qui ont suivi des régimes scolaires différents, notamment en ce qui concerne l'importance accordée au français. Les deux derniers groupes qui figurent au tableau A, les "immergés précoces" et les "témoins anglais" nous sont familiers, désormais rendus célèbres par les écrits de Lambert et son équipe à l'Université McGill à Montréal. (Voir, par exemple, Lambert et Tucker, 1972). Au moment de l'auto-évaluation, nos "immergés tardifs", objet principal de nos recherches depuis des années, étaient en première année de CEGEP et ils avaient suivi un programme d'immersion semblable à ceux décrits dans les travaux de Genesee, par exemple (voir Bibliographie). Les "submergés" sont des non-Francophones ayant fait au moins une bonne partie sinon la plupart de leurs études à l'école française. Les "drop-outs", dans nos termes, sont des non-Francophones qui ont abandonné un programme d'immersion en cours de route.

TABLEAU A

Auto-évaluation des immergés tardifs, des submergés, des drop-outs, des immergés précoces, des réguliers (11e année):

<u>Sous-groupe</u>	<u>Moyenne</u>			
	<u>parler</u>	<u>comprendre</u>	<u>lire</u>	<u>écrire</u>
immergés tardifs	5,958	6,708	6,625	5,83
submergés	7,18	8,16	6,96	6,88
drop-outs	5,15	5,69	5,538	4,538
immergés précoces	6,58	7,70	7,00	6,11
réguliers(11 ^e année)	4,95	5,57	5,14	4,85

Les résultats de ces auto-évaluations nous font soupçonner, bien qu'avec certaines réserves inspirées par les résultats du test de corrélation des rangs (ci-dessous), que l'auto-évaluation par de tels échantillons est révélatrice. C'est-à-dire que nous avons des raisons indépendantes de croire que, globalement, il faudrait ordonner ces groupes, pour ce qui est de leurs capacités en français, de la façon suivante : 1) "submergés"; 2) "immergés précoces"; 3) "immergés tardifs"; 4) "drop-outs"; 5) "témoins anglais". Pour vérifier cette hypothèse, il faudra un jour qu'une étude du français des élèves non-Francophones porte sur tous ces groupes. Un de nos propres tests permet effectivement la comparaison entre cinq groupes d'élèves, mais de caractère quelque peu différent.

D'autre part, nous avons fait passer un même test "cloze" à six groupes d'élèves. Nous avons retenu les résultats de 5 de ces groupes, rejetant ceux du groupe pilote de 30 élèves. Dans un test "cloze", le candidat essaie de restituer un texte dont tous les n mots ont été volontairement omis. Les travaux de certains linguistes appliqués, tels que J. Oller (1972, 1977) traitent de l'utilisation des tests cloze dans l'évaluation de la compétence en langue étrangère. Puisque nous avons affaire encore ici à des groupes de sujets qui n'ont pas encore été identifiés,

passons-les en revue : 1) les "immersés tardifs" (non-Francophone - en douzième année - première du CEGEP); 2) leurs contrôles francophones (aussi en douzième); 3) les "submergés" (non francophones - en onzième année); 4) un groupe témoin francophone (aussi en onzième à l'école française); 5) un groupe bilingue francophone-anglophone (également en onzième année à l'école française ou anglaise).

Le tableau B montre les résultats du même test cloze après de ces cinq groupes d'élèves, en termes de pourcentage de résultats "acceptables". La correction "acceptable", selon notre interprétation ici, considère comme "bonnes" les réponses qui restituent le mot original ou qui insèrent, à sa place, un synonyme ou un autre mot qui est sémantiquement compatible avec le texte entier. Nous avons, bien sûr, tenu compte de bien d'autres niveaux et d'autres types d'acceptabilité dans nos traitements de résultats du "cloze", mais nous exposons ces analyses détaillées ailleurs.

TABLEAU B

Cloze : réponses "acceptables" pour 5 catégories grammaticales et 5 groupes de sujets

<u>Catégories</u>	<u>Groupes de sujets</u>				
<u>grammaticales</u>	<u>Fr. 1980</u>	<u>Immergés</u>	<u>Fr. 1981</u>	<u>Submergés</u>	<u>Bilingues</u>
Nom (11)	85.3	77.3	79.1	74.1	78.2
Verbe (11)	88.1	55.7	86.4	69.6	79.1
Pronom (6)	97.4	79.9	99.3	94.2	95.0
Conjonction (6)	92.3	87.5	95.2	90.4	95.0
Déterminant (6)	93.6	94.5	97.2	91.6	98.4

Un autre test de la connaissance du français qui permet une comparaison quantitative et rapide entre groupes est notre "Test de structures spécifiques", composé de plusieurs sections. Les cinq premières parties du test étaient à choix multiples et portaient, respectivement, sur 1) les déterminants; 2) le placement des pronoms; 3) le niveau de style associé à certains mots; 4) des expressions idiomatiques; et 5) les rapports logico-sémantiques entre mots dans un même domaine lexical. Les sixième et septième parties du test portaient, respectivement, sur la pronominalisation et sur les interrogatives affirmatives et négatives. Ces deux dernières sections sont d'un plus grand intérêt pour la comparaison qualitative entre différents groupes de locuteurs, puisqu'elles exigent que le candidat reformule une phrase. Dans la sixième partie du test, il s'agissait de remplacer un SN ou un SP souligné par le pronom clitique complètement correspondant. Dans la septième partie, il fallait formuler une question affirmative ou négative (selon la consigne), à partir d'une mise en situation. Nous avons formulé un passage d'entre trois et cinq lignes qui proposait une situation où l'interrogative devenait appropriée, la question étant suggérée sous forme indirecte.

C'était au candidat d'écrire la question directe correspondante, en suivant des exemples.

Le tableau C présente les résultats des cinq premières parties du "test de structures spécifiques", pour notre échantillon principal, les "immergés tardifs", et pour leur groupe témoin francophone. Le tableau D, d'un plus grand intérêt linguistique, présente les types d'erreurs commis par les anglophones et par les francophones à la section VI, là où on exigeait et la pronominalisation et le placement du pronom, sans support aucun (du type choix multiple ou complétion). Finalement, le tableau E indique les types d'erreurs commis par les "immergés tardifs" en écrivant les questions affirmatives et négatives exigées à la dernière section du test de structures spécifiques. A noter que leurs contrôles francophones ont commis si peu d'erreurs dans cette partie du test qu'il nous est impossible d'en faire une "taxonomie". Il s'agirait là plutôt d'un très petit nombre de lapsus.

TABLEAU C

Test de structures spécifiques : questions (25) à choix multiples

	<u>N</u>	<u>moyenne</u>	<u>étendue</u>
Anglophones	23	16.83	10-21
Francophones	14	22.07	20-24

TABLEAU D

Structures spécifiques : Pronoms : Nombre d'erreurs de différents types (sur 5 questions)

<u>Type d'erreur</u>	<u>Anglophones (23)</u>	<u>Francophones (14)</u>
Remplacement par mauvais pronom personnel (clitique)	27	3
Remplacement par forme pronominale forte	1	16
Non-pronominalisation	0	3
Mauvais ordre des mots	4	0

TABLEAU E

Structures spécifiques : Formulation des questions (10) : Nombre d'erreurs de différents types chez les Anglophones (23)

Mauvaise forme du verbe	22
Omission du pronom (complément) d'un verbe pronominal	20
Mauvaise préposition	9
Mauvais pronom (complément) avec un verbe pronominal	8
Mauvais ordre des mots	7

Nous aurions voulu faire une série de comparaisons directes, qualitatives et quantitatives, entre le français et l'anglais de nos "immersés". Nous disposons même de corpus anglais et français de ces étudiants qui seraient suffisamment comparables pour permettre une même forme d'analyse : l'enregistrement d'une entrevue en anglais, portant sur l'utilisation du français dans la vie du candidat, de même que l'enregistrement d'une seconde entrevue portant sur un film muet visionné juste avant l'entrevue. Malheureusement, compte tenu de nos besoins actuels, nous n'avons pas poursuivi le même type d'analyse pour ces corpus jumelés. Pour l'instant, la seule comparaison directe entre l'anglais et le français de nos "immersés" dont nous disposons est fournie par une mesure de leur débit. C'est, plus précisément, le calcul du nombre de "groupes de souffles" par minute. Le "groupe de souffle" a été défini pour fins d'évaluation selon le système "OLAF" (Oral Language Analyser and Feedback System), formulé par Ferguson (1978) et adapté par Freedman (1978)¹. Le tableau F indique le débit moyen des "immersés" en anglais (pendant leur entrevue en anglais), le débit moyen du même groupe en français (pendant leur entrevue en français), et le débit moyen (pendant cette même entrevue) de leurs contrôles francophones.

TABLEAU F

Balablok : débit (groupes de souffle/minute)

	<u>N</u>	<u>Moyenne</u>	<u>Etendue</u>
Anglophones-Anglais	16	28	20,3 - 34,6
Anglophones-Français	23	16,2	11,8 - 26,4
Francophones-Français	11	28	17,8 - 37,5

Toujours à propos de cette même paire de corpus anglais-français, certaines remarques comparatives sont encore disponibles, malgré le fait que les analyses comparées n'aient pas la même forme. L'analyse du corpus anglais, par Linda Raymond, a pris une forme nettement quantitative. Par exemple le décompte, chez chaque sujet, du nombre de types de propositions, du nombre maximal d'enchâssements, du nombre de conjonctions dites "rares" qui ont été employées, le nombre de mots différents (types), le nombre de temps verbaux utilisés, le nombre de verbes composés de plus de deux morphèmes et le nombre de suffixes dérivationnels. Le tableau G résume la performance moyenne du groupe des immersés selon les indices utilisés par L. Raymond :

TABLEAU G

Entrevue en anglais : indices de performance linguistique (N= 22)

<u>Indice</u>	<u>Moyenne</u>	<u>Etendue</u>
Nombre de types de propositions	8,91	7 - 11
Nombre maximal d'enchâssements	2,95	2 - 4
Nombre de circonstanciels en <u>-ing</u>	1,91	0 - 4
Nombre de conjonctions rares	0,86	0 - 3

TABLEAU G (suite)

Nombre de mots scientifiques	0,64	0 - 3
Nombre de mots relevés	0,68	0 - 3
Nombre de mots différents (types)	155,68	95 - 193
± usage du subjonctif (- = 10; + = 1)	0,045	0 - 1
Nombre de "temps" différents (max. = 7)	5,27	4 - 6
Pronoms compléments (max. = 12; datif ou accusatif; sg. ou pl.; 1, 2, 3 personnes)	4,86	3 - 7
No de Vb composés de - de 2 morphèmes	1,36	0 - 4
Nombre de suffixes dérivationnels	11,00	3 - 19

Toujours sans pouvoir produire des données comparables à ces indices pour le français des immergés, ni pour l'anglais d'autres groupes de sujets, nous pourrions conclure sans hésitation à partir du tableau G que les immergés emploient un anglais presque adulte, raisonnablement varié et complexe.

L'analyse correspondante de l'entrevue française auprès de nos "immergés" découle d'un codage morpho-syntaxique et lexical, fait par Richard Patry, membre de notre équipe de recherche. Sans avoir quantifié ses observations, Patry a constaté certaines difficultés dans l'usage du français par nos immergés qui font déjà soupçonner qu'une grille d'analyse analogue à celle utilisée pour décrire leur anglais n'indiquerait pas une aussi grande utilisation des ressources du français. Par exemple, les expressions proprement idiomatiques étaient presque inexistantes dans les échantillons étudiés du corpus français des immergés. L'ordre des mots, de même que les structures dites "transformées" ne causaient que très peu de problèmes. Les quelques cas-problèmes étaient généralement associés à la pronominalisation, qui est un processus fondamental. Il a de plus relevé un certain nombre de problèmes d'accord et de concordance (verbale et pronominale) tout au long du discours.

Le corpus fourni par l'entrevue sur le film muet a cependant fait l'objet d'autres analyses qui, cette fois-ci, permettent de comparer nos "immergés tardifs" avec certains des groupes témoins. Le même système "OLAF" que nos collaborateurs ont employé pour mesurer le débit de nos sujets en français et en anglais a fourni une méthode d'évaluation de la "correction" de chaque "groupe de souffle" (Ferguson op. cit.; Freedman op. cit.). Cette méthode a été appliquée au corpus français de nos immergés et à celui de leur groupe témoin francophone. Sans nous attarder aux détails des modalités d'évaluation du degré de correction, nous en présentons des données comparatives pour les groupes "immergés tardifs" et "témoins francophones" au tableau H :

TABLEAU H

Balablok : correction en français

	<u>N</u>	<u>Moyenne</u>	<u>Etendue</u>	<u>Etendue possible</u>
Anglophones	23	0,67	0,53 - 0,79	0 - 1
Francophones	11	0,95	0,87 - 0,98	0 - 1

A noter, en particulier, qu'il n'y a pas de chevauchement entre les étendues des résultats des "immersés tardifs" et de leurs contrôles francophones en ce qui a trait, du moins, à la correction. Il importe ici de spécifier que le correcteur a insisté sur le français standard pour les sujets francophones, mais beaucoup moins pour les anglophones.

Encore une autre étude du corpus fourni par les entrevues sur le film est celle de Jean-Pierre Karnas, autre membre de notre équipe de recherche. L'entrevue avait été conçue (par Nathan Ménard et Louise Jasmin-Demers) de manière à provoquer l'usage spontané d'un certain nombre de structures syntaxiques. Il s'agissait des (1) restrictives; (2) locutions comparatives (des différents sous-types); (3) conditionnelles; (4) indéfinis; (5) quantificateurs; (6) expressions implicatives; (7) focalisations (clivées); (8) alternances discursives entre *je/tu*; (9) subordonnées temporelles; et (10) (propositions) causales.

Cette fois, les données comparatives proviennent d'une part, des "immersés tardifs" (en douzième année), et d'autre part, de groupes témoins fréquentant l'école française au niveau onzième année au moment de l'entrevue. Dans son étude, Karnas a noté la présence ou l'absence de chacune des structures ci-haut mentionnées et, s'il y avait lieu, une occurrence bien formée et une occurrence mal formée de chacune, le français standard étant la norme de référence. Le tableau I présente un score moyen pour chacun des trois groupes étudiés, score calculé selon une formule qui tient compte de l'occurrence des structures, mais qui insiste surtout sur la correction des occurrences, puisque nous avons des raisons de croire que l'absence de certaines structures dans nos relevés ne veut pas nécessairement dire que, dans la majorité des cas, les sujets étaient incapables de les produire :

$$\frac{\Sigma \text{ bonnes occurrences}}{\Sigma \text{ occurrences produites}} \times \sqrt{1 - \frac{13 - \Sigma \text{ occ. prod.}}{13}}$$

13 = les 10 structures énumérées ci-dessus + certaines variantes.

Pour aborder la question de l'utilité différentielle de divers types de tests et mesures, nous exposerons ici ce que nous appelons notre "étude des juges". Premièrement, les "juges" étaient deux groupes d'étudiants francophones, dans deux cours de linguistique de deuxième année du programme B.A. en linguistique à l'Université de Montréal. Ce qu'ils devaient juger, c'était,

encore une fois, des extraits du corpus constitué par l'enregistrement de l'entrevue portant sur le film. Les objets du jugement étaient, à nouveau, notre échantillon principal, soit les "immergés tardifs". Pour chacun des sujets de ce groupe, J.-P. Karnas a repiqué la portion de l'entrevue dans laquelle le sujet raconte aux interviewers le contenu du film, cette partie de l'entrevue constituant le plus long segment de discours ininterrompu. Chaque extrait est d'environ une à deux minutes. Par ailleurs, à l'insu des juges, notre groupe de recherche a dressé une liste de douze "emplois temporaires", emplois que nos jeunes sujets pourraient très bien vouloir postuler, qu'ils soient garçons ou filles. Nous avons classé ces emplois en trois groupes (de quatre) : (1) ceux qui seraient susceptibles d'exiger des compétences supérieures en français (en présupmant que nos sujets doivent travailler au moins partiellement en français, à Montréal); (2) ceux qui exigeraient une compétence moyenne et (3) ceux qui n'exigeraient qu'une compétence faible en français.

Nous avons d'abord présenté aux juges la liste de ces douze "emplois", dans un ordre aléatoire. Le premier groupe de juges n'a reçu qu'une consigne (écrite) : en écoutant (collectivement) chaque extrait d'entrevue, il faut choisir pour chaque candidat écouté l'emploi qui semblerait lui convenir le mieux. Le second groupe de juges a écouté, individuellement l'extrait de chaque entrevue deux fois. Au premier tour, chaque juge recevait la même consigne que celle donnée au premier groupe de juges. Au second tour, le juge remettait au surveillant sa première liste de "classements", puis recevait immédiatement une seconde consigne différente, qui lui avait été cachée au premier tour. On lui demandait alors de choisir pour chaque candidat un des douze emplois déjà énumérés, mais en utilisant cette fois, comme seul critère de classement, la capacité du sujet à parler français (telle qu'il la percevait à partir de ce seul extrait d'entrevue).

Notre but, bien entendu, était de quantifier les jugements et de comparer ceux que les juges avaient portés dans des circonstances différentes. Il faut dire que l'expérimentation des jugements comparatifs des deux groupes ne nous a pas fourni les résultats escomptés. Bien que les consignes aient été les mêmes pour les deux groupes, les juges et les conditions d'écoute étant différents d'un groupe à l'autre ont rendu la comparaison très difficile. Toutefois ce qui nous intéressait davantage c'était la comparaison entre les deux écoutes du même (second) groupe de juges puisque là, seule la consigne avait changé d'une écoute à l'autre. Plus particulièrement, nous voulions savoir si l'imposition de la contrainte linguistique sur le second jugement pourrait produire un changement notable dans les résultats. Si oui, quel type de différence peut découler de cette contrainte (dans la mesure où les modifications dans les jugements ne provenaient pas d'autres sources)?

Jean-Pierre Karnas a attribué trois points à chaque sujet pour un "classement" (par juge) dans la catégorie des emplois exigeant une compétence "supérieure" en français, deux points pour un classement dans la catégorie "moyenne" et un point chaque fois que le sujet se voyait attribuer un emploi exigeant peu de compétence en français (selon notre catégorisation). Cette quantification des trois jugements de la part des francophones, portés sur chaque "immergé", a permis d'attribuer un certain poids collectif aux facteurs auxquels nous pourrions imputer des différences importantes entre les résultats des jugements, s'il y en avait. Le tableau J résume les résultats (quantitatifs) de cette expérience:

TABLEAU J

Etude des juges : points attribués aux sujets (N=22) aux 3 écoutes

Ecoute	Gr. de sujets	Type d'écoute	max. pers.	moyenne	étendue
1	B	collective	60	38,86	25-57
2	A	individuelle	42	28,23	18-39
3	A	individuelle	42	27,545	18-41

Nombre de classements par catégorie d'emploi

Ecoute	Type d'emploi			Refus de classer un sujet
	I	II	III	
1	164	125	115	36
2	109	95	105	0
3	106	92	98	14

Pour voir si ces variantes de l'expérience ont produit des différences significatives et, plus généralement, pour savoir jusqu'à quel point nos différentes mesures ont fourni des résultats vraiment différents, il faudra faire appel au test de corrélation des rangs. On constatera au tableau K qu'il n'y a aucune corrélation significative entre les tests de jugement et les autres mesures discutées précédemment. Toutefois on remarquera une corrélation très élevée entre les rangs du test de jugement du groupe A-1 et ceux du test de jugement du groupe A-2.

TABLEAU K

Corrélations significatives à .001 entre mesures : l'échantillon principal

Test	Spearman	Kendall
. Cloze score exact/Cloze score acceptable	.9029	.7931
. Cloze score exact/Cloze erreurs grammat.	.9052	.8101
. Cloze score exact/Cloze erreurs catégor.	.7631	.6234
. Cloze score accept./Cloze erreurs grammat.	.8657	.7365
. Cloze score accept./Cloze erreurs catégor.	.7278	.5877
. Cloze erreurs grammat./Cloze erreurs catég.	.8329	.6950

TABLEAU K (suite)

Test	Spearman	Kendall
. OLAF score global/OLAF score selon indice de débit	.8261	.6364
. OLAF score global/OLAF score selon indice de correction grammat.		

Corrélations significatives à .01 entre mesures : l'échantillon principal

Test	Spearman	Kendall
. Auto-évaluation/Analyse du perfectionnement linguistique en anglais	.5581	.4074
. Auto-évaluation/OLAF score global	.5326	.3742
. Auto-évaluation/OLAF score selon indice de débit	.4820	.3568
. Auto-évaluation/OLAF score selon indice de correct. gram.	.5581	.4001
. Cloze score exact/Structures spécifiques	.4818	.3524
. Cloze score exact/OLAF score selon indice de correct. grammat.	.4691	
. Cloze score accept./Structures spécifiques		.3437
. Cloze score accept./OLAF score global	.5218	.3476
. Cloze score accept./OLAF score selon indice de correct. grammat.	.5843	.4390
. Cloze erreurs grammat./OLAF score selon indice de correct. grammat.	.4707	.3516
. Cloze erreurs catégor./Structures spécif.	.4981	.4072
. Cloze erreurs catégor./OLAF score selon indice de correct. grammat.	.5859	.4480
. Anal. du perfec. ling. en anglais/OLAF score global en français		.3941
. OLAF score selon indice de débit/OLAF score selon indice de correct. grammat.		.3414
. Etude de jugements A-1/Etude de jugements A-2	.704	

D'un certain point de vue, l'absence d'une corrélation élevée entre nos mesures peut être plus intéressant que la présence d'une telle corrélation. Dans ces cas précis, nous pouvons affirmer que nous sommes parvenus à tester deux capacités (linguistique ou autres) qui sont au moins partiellement distinctes l'une de l'autre.

NOTES

*Cette étude a été subventionnée par la FCAC (Ministère de l'Éducation du Québec) : Subvention no EQ-1352 et par le CAFIR de l'Université de Montréal. Nos remerciements au co-directeurs du

projet, M. Toker et N. Ménard.

1. Nous tenons à remercier Monsieur Rubin Freedman et son équipe de l'Unité de l'élaboration des tests, à la Direction des langues officielles à Ottawa, pour leur analyse très étendue de certains de nos corpus et tests.
2. Nos remerciements à J.-P. Lalonde, P. Léonard, M. Toker et N. Ménard pour leur travail sur la corrélation des rangs, ainsi que le test cloze.

REFERENCES

- Chihara, T., J. Oller, K. Weaver et M. Chavez-Oller. 1977. "Are Cloze Items Sensitive to Constraints Across Sentences?" Language Learning 27, pp. 63-73.
- Cziko, G., W. Lambert, N. Sidoti et G. Tucker. 1978. "Graduates of Early Immersion: Retrospective Views of Grade II Students and their Parents." Université McGill, Montréal.
- Ferguson, N. 1978. "Test N73: Instantaneous Evaluation of Speaking Ability." Revue internationale de linguistique appliquée 16, pp. 340-349.
- Freedman, R. 1978. "Sous-test d'expression orale 500A". Medium 3, pp. 71-81.
- Genesee, F. 1979. "A Comparison of Early and Late Immersion Programs". Université McGill, Montréal.
- Lambert, W. et G. Tucker. 1972. Bilingual Education of Children: The St-Lambert Experiment. Rowley: Mass.: Newbury House.
- Oller, J. 1972. "Cloze Tests of Second Language Proficiency and what they measure." Language Learning 23, pp. 105-118.

THE RELATION OF L1 VOCABULARY TO L2: A STUDY OF HUNGARIAN-AMERICANS^x

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Most students of bilingualism in North America /e.g. Haugen 1953, Lyra 1962, Seaman 1972/ have dealt with the topic of vocabulary one-sidedly, that is, they have concentrated only on the immigrants' native languages, largely neglecting their acquisition and mastery of English lexical items. One methodological principle of the Project on Hungarian-American Bilingualism in South Bend, IN¹ has been to try to gain from informants as much and as varied English data as Hungarian data, thereby attempting a systematic two-way study of the bilinguals interviewed.

This paper is a report on the English and Hungarian vocabularies of eleven informants as reflected by their performance on a picture elicitation test administered in 1980. It will be demonstrated that immigrants and American-born speakers are fairly different from the point of view of vocabulary dominance: the former group being dominant in Hungarian and the latter in English. First a description is given of how the data was gathered and classified, then an analysis of the results follows.

1. PROCEDURE

1.1. Both Lyra /1962/ and Seaman /1972/ have followed Haugen's /1953/ example in using, among other things, a scrapbook made from clippings found in magazines and mail order catalogs for the elicitation of informants' vocabulary items. In this way "a certain assurance was had that the same thing was actually understood by each of the informants" /Haugen 1953:325/. There being no universally used pictorial aids in English dialect research /cf. Kinloch /1971/ for an overview/, I decided to use pictures in the Oxford Picture Dictionary of American English as the aid for vocabulary elicitation. The following pictures were chosen: No. 23 /On a Building Site/, No. 26 /A House/, No. 36 /On the Farm/, and No. 38 /Travel by Road/. Each informant was shown all four pictures and then asked which two of the four he/she would be most comfortable talking about. When a

subject made his/her choice, he/she was asked in Hungarian by a native speaker /the present writer/ to name the numbered items in the pictures in H/ungarian/. This was done as part of the H interview usually lasting 40 to 60 minutes. Then, in the course of the E/nglish/ interview conducted by a native speaker of American English,² the same two pictures were used to elicit the subject's knowledge of E vocabulary items. Throughout all interviews a tape recorder was run at all times.

1.2. Eleven informants' data are analyzed in this paper. Five of them /I1, I2, I3, I4, and I5/ are immigrants, the first of whom has lived in the U.S. for 59 years, the other four for 23 years. All of them arrived in America after the age of 15, thus at an age when, according to the sensitive period hypothesis, "absolute, native-like proficiency in all aspects of [English] /including vocabulary and syntax/" /Patkowski 1980:464/ was impossible for them to attain.

Informants 6-10 are second-generation Hungarian-Americans, and I11 is a third-generation speaker. All but I10 and I11, who live in the East Chicago area, are residents of South Bend, IN.

1.3. All responses have been assigned to one of five groups: /1/ correct word, /2/ acceptable but not quite correct word, /3/ conversational definition, /4/ incorrect word, and /5/ no response. All responses regarded either as "correct" or as "acceptable but not quite correct" are listed in the Appendix.

Between groups /1/-/2/ and /4/-/5/ lies /3/ which can be termed conversational definitions in the sense of Baxter /1980/. When a particular lexical item is not known or not accessible to a speaker, he/she will often operate with a conversational definition in his/her speech. "Definition is a fundamental language skill," says Baxter /p. 330/, and he also notes that lexical imprecision does not necessarily entail imprecision of meaning. About 7 per cent of all the responses have been classified as conversational definitions. Some E examples are: that's what you hold the cement in for hod, brick-layer shovel for trowel, front-and-rear loader for excavator, that's underneath the ground of the house for foundations, and a tool that a mason would use for mixing for trowel. Hungarian examples of conversational definition include: aki téglát rak 'one who lays bricks' for kőműves 'mason', a tükör, amivel lehet látni, hogy ki van a háta mögött 'the mirror in which one can see who is behind him' for visszapillantó tükör 'rearview mirror', az ember, aki vezeti az aratógépet 'the man

who operates the harvest machine' for kombájnos 'combine operator', ablaknak a szegélye, széle 'the edge of a window' for ablakkeret 'window frame', ahol fölfordította az eke a földöt 'where the plow has turned over the ground' for barázda 'furrow'.

Group /4/, incorrect words, includes cases such as man for bricklayer, trees for orchard, tractor for combine, a pump of some kind for pneumatic drill /this might have been due to either ignorance of pneumatic drills or the misinterpretation of the drawing/, ház [ha:z] for house /i.e. the informant used the fairly similar-sounding H word which also means 'house'/, traktor for tractor /the H cognate instead of the E word/, hair for mane etc. Similarly in H: villany 'light' for index 'turn signal', clutch for kuplung /the speaker used the E word instead of the H/, utolsó lámpa 'last light' for hátsó lámpa 'taillight', erdő 'woods' for mező 'field', víz 'water' for öntöző csatorna 'irrigation ditch' etc.

The incorrect words could be broken down into wrong in-language words and other-language words, with the latter group further subdivided into cognates and non-cognates. This could have been done only if we had asked each informant "Is this a Hungarian/English word?" whenever he/she gave an other-language name. It seems, however, that asking this question every time would not only slow down the elicitation but might also embarrass some informants.

1.4. In about 25 per cent of all the cases in which a response different from the correct one had been given, the interviewers either tried to prompt the correct answer or directly asked the informant "Have you ever heard the word X?" Prompting was done by various means, e.g. the interviewer said kő... to prompt kőműves 'bricklayer', or instructed the informant this way: "Say gas pedal in Hungarian." /This was meant to prompt gáz pedál./ Although both prompting and the recognition question were used in a haphazard, unpremeditated way /partly to avoid frustrating informants by constantly calling their attention to what they did not know or remember/, it was thus possible to obtain some data concerning the informants' passive vocabularies.

2. ANALYSIS OF DATA

Table 1 shows the eleven informants' responses assigned to the five groups mentioned in 1.3.

Informants and pictures	Hungarian					English				
	Cor.	Acc.	Conv. def.	Inc.	Ø	Cor.	Acc.	Conv. def.	Inc.	Ø
I1, Nos. 23, 36 N=58	35	3	4	10	6	24	0	1	18	15
I2, Nos. 36, 26 N=55	47	3	0	5	0	20	2	1	17	15
I3, Nos. 23, 36 N=43 ³	38	0	1	3	1	30	0	1	8	4
I4, Nos. 26, 36 N=55	49	0	2	2	2	34	1	0	10	10
I5, Nos. 38, 23 N=64	30	10	8	11	5	58	0	1	5	0
N=275 per cent	199 72.36	16 5.81	15 5.45	31 11.27	14 5.09	166 60.36	3 1.09	4 1.45	58 21.09	44 16.00
I6, Nos. 23, 26 N=45	12	0	1	18	14	38	0	0	7	0
I7, Nos. 23, 36 N=58	31	2	9	3	13	54	0	1	2	1
I8, Nos. 26, 38 N=61	12	4	2	10	33	51	1	1	6	2
I9, Nos. 26, 38 N=61	10	4	5	25	17	47	1	0	7	6
I10, Nos. 36, 26 N=55	29	2	3	13	8	41	1	0	12	1
I11, Nos. 23, 36 N=58	19	2	1	13	23	48	2	2	6	0
N=338 per cent	113 33.43	14 4.14	21 6.21	82 24.26	108 31.95	279 82.54	5 1.47	4 1.18	40 11.83	10 2.95

Table 1

2.1. If we look at the data to determine the subjects' VOCABULARY DOMINANCE, we find that the immigrants scored 72.36 per cent on the H test and 60.36 per cent on the E test, but the 2nd/3rd-generation speakers scored quite differently: only 33.43 per cent on the H test but 82.54 per cent on the E one.⁴

Immigrants and American-born speakers thus neatly fall into separate groups. There is one remarkable speaker, I5, whose E score is much better than his H score, despite the fact that he is an immigrant who arrived in the U.S. at age 18. But he is a typical freedom fighter in the sense that he has always wanted to integrate into mainstream American society as much as possible, whereas Is 2, 3, and 4, although freedom fighters in the sense Fishman /1966/ uses the term, are in almost every way atypical. Having come to the U.S. at a much later age than I5, their motivation to integrate is much weaker. Their life-style is very similar to that of the old-timers, such as I1, in fact, they are latter-day old-timers, a category Fishman /1966/ does not consider at all. /For a detailed sociolinguistic description of I5 see Kontra and Nehler forthcoming./

2.2. Clyne /1972:96-7/ has found that "lexical items are forgotten [by the Germans in Australia he has investigated], due to a lack of reinforcement." He also notes that Vildomec's plea /1963:86/ that "the forgetting of a language should also be studied thoroughly by linguists" has not been heeded. By surveying those H responses of the 5 immigrants that are different from the correct answers we can gain some picture of the NOT /CORRECTLY/ RECALLED HUNGARIAN WORDS. These should not be called "forgotten Hungarian words" since some speakers may never have known some of them. Informants gave a total of 76 responses /27.62 per cent/ other than the correct ones. Of these 16 were acceptable but not quite correct answers, 15 were conversational definitions, 31 were incorrect answers, and 14 no responses.

The following seven words rank highest on the list of not /correctly/ recalled H words: lefolyócső 'drain-pipe', deszka 'board', habarcshordó saroglya 'hod', exkavátor 'excavator' /these were not correctly recalled by 3 out of 3 informants answering/, erkély 'balcony', and terasz 'patio'⁵ /not correctly recalled by 2 out of 2 informants/, kombájnos 'combine operator' /2 conversational definitions and 2 acceptable but not quite correct answers/.⁶

2.3. An item analysis performed to determine the NON-ACQUISITION of the immigrants' E vocabulary and the

2nd/3rd-generation speakers'H vocabulary reveals the following:

If all answers other than the "correct words" are taken to be non-acquired lexical items, the immigrants have failed to acquire a total of 109 E lexical items out of 275 /39.63 per cent/, and the 2nd/3rd-generation Hungarian-Americans have not acquired 225 H words out of 338 /66.56 per cent/ /cf. Table 1/. /N.B. Since non-native words may have been acquired and then forgotten, it should be borne in mind that NON-ACQUISITION here really means this: a certain informant did not know a certain word at the time of the elicitation./

The words in the test pictures which were least known to the subjects are the following:

	<u>Item No.</u>	<u>E word with No. of immigrants to whom unknown</u>	<u>H word with No. of 2nd/3rd-generation speakers to whom unknown</u>
Picture 23:	18	hod 3	habarcshordó
	7	scaffolding 2	saroglya 3
	17	trowel 2	állványzat 3
	20	excavator 2	malteros kanál 3
			exkavátor 3
Picture 26:	9	window frame 2	ablakkeret 4
	11	windowsill 2	ablakpárkány 4
	16	gutter 2	esővízcsatorna 4
	3	outside wall 2	fal, homlokzat 3
	4	balcony 1	erkély 4
	5	patio 1	terasz, loggia 4
	12	shutter 1	zsalugáter 4
	14	curtain 2	függöny 3
	18	doormat 1	lábtörlő 4
	19	TV antenna 1	tévéantenna 4
	20	tool shed 2	szerszámos kamra 3
Picture 36:	17	irrigation canal 4	öntözőcsatorna 3
	20	furrow 4	barázda 3
	26	mane 4	sörény 3
	27	hoof 4	pata 3
	5	hogpen 3	disznóól 3
Picture 38:	7	exhaust 1	kipufogócső 2
	35	spark plug 1	gyertya 2
	36	cylinder head 1	hengerfej 2

All of these words but three /wall, balcony, and curtain/ are rather infrequent in spoken English, as is shown by the fact that they are not listed in the best

frequency count available /Dahl 1979/. There being no frequency dictionary of Hungarian as yet, nothing can be said about the frequency of the H equivalents.

Conversely, if we look at the most known words, we find that all but one /sheep/ are among the 17,871 types found in Dahl's spoken English corpus of over one million tokens:

	<u>Item No.</u>	<u>E word with No. of immigrants to whom known</u>	<u>H word with No. of 2nd/3rd-generation speakers to whom known</u>
Picture 23:	4	shingles, roof/ing/ 3	zsindely, háztető 3
	5	/step/ladder 3	létra 3
	8	bricks 3	téglák 3
	15	sand 3	homok 2
Picture 26:	1	roof/ing/, shingle 2	/ház/tető 3
	6	garage, garage door 2	garázs/ajtó/ 3
	8	/attic/window 1	/padlás/ablak 4
	13	window box, flower box, planter, flowers 1	virágláda, virágtartó, virágok 4
	21	grass, lawn 2	fű 3
Picture 36:	10	fence 3	kerítés, korlát 3
	11	fruit tree 3	gyümölcsfa 3
	21	cow 4	tehén 3
	25	horse 4	ló 3
	32	duck, goose 4	kacsa, liba 3
	33	hen, chicken 4	tyúk 3
	14	wheat, crop 2	búza, gabona 4
	23	bull 3	bika 3
	29	sheep 3	birka 3
	35	/baby/chick 3	kiscsirke 3
Picture 38:	8	tire 1	kerék, gumi 2

The average raw word frequency of these 19 words as calculated on the basis of Dahl /1979/ is between 10.00 and 11.00.

2.4. As mentioned in 1.4., in roughly every fourth case when an answer different from the correct one was given, the interviewer tried to find out if the correct answer belonged to the informant's PASSIVE VOCABULARY.

Nine of eleven subjects were asked "Have you ever heard the Hungarian word X?" 87 times in all. In 26 cases

the answer was "no". All "no" answers came from 2nd/3rd-generation speakers, and the six speakers failed to recognize at least one H word each.

It is noteworthy that two 2nd-generation women recognized the word ablakráma 'window frame', but not the synonymous ablakkeret, which is by far the more frequent word in present-day metropolitan Hungarian.

If we consider the 26 cases when the E recognition question was asked of four immigrants and one 2nd-generation speaker, we see only two cases where an immigrant did not recognize a word /orchard, saddle/. From the point of view of frequency, these 26 words /not listed for lack of space/ lie clearly between the "words least known to the informants" and the "words most known to the informants" /cf. 2.3./ as their average raw word frequency according to Dahl /1979/ is 3.88. /"Word" in "26 words" above means "token". In all, 20 E "types" were asked about. All four immigrants were asked if they knew lamb, for instance, which they said they did./

In 20 cases an attempt was made to prompt the correct H answer. Six of these attempts failed: all were instances where a 2nd/3rd-generation speaker was involved. Prompting sometimes was done by instructing the informant to pronounce the E word "in the Hungarian way". In this way two 2nd-generation speakers were prompted to pronounce an acceptable H exkavátor 'excavator'. When a 2nd-generation speaker was prompted to pronounce gas pedal "in the Hungarian way", she came up with gáz pedál [ga:z pedl], i.e. a H and an E word, obviously not knowing that pedal too had a H cognate, pedál.

2.5. Seaman /1972:201/ notes that "the number of unassimilated loanwords which can occur in American Greek speech is theoretically unlimited." The same phenomenon has been found with regard to American Hungarian speech in our tape recordings; even in the elicitation test a good many E words were used by informants when H words were sought.

The following ENGLISH LOANWORDS IN AMERICAN HUNGARIAN have been found in the picture elicitation tapes: trektör /<tractor/, trakk /<truck/, ciment and sziment /<cement/, tívi-antenna /<TV antenna/, grádzs /<garage/, tojlet /<toilet/, síngöl /<shingle/, balkoni /<balcony/, csiken /<chicken/, ruf /<roof/, szájdíng /<siding/, káré /<car/, lájsznisz /<licence/, sufli /<shovel/. A word of caution is in order here: Labeling the above "E loans in American Hungarian" can only be justified by their greater degree of phonetic adaptation

than is seen in the case of the numerous unassimilated E loans. The borderline between the E loans here listed and the unassimilated words is extremely difficult to draw, if at all possible.

Peñalosa /1980:125/ has noted that whereas Chicano Spanish borrows extensively from English, Chicano English seems to have no more Spanish words than other local varieties of English. In the case of three H immigrant women, one old-timer and two freedom fighters, some borrowing from H into their E speech is evident. Two use the H ház for E house, also two use H traktor for E tractor, and one of them pronounced antenna in the H way /i.e. with all the vowels fully articulated and with stress on the first syllable/ when asked in English. This speaker is probably aware of the existence in E of a cognate of H antenna, unlike the 2nd-generation speaker who asked us "Magyarul mi antenna?", that is, "What is antenna in Hungarian?" Some 2nd/3rd-generation speakers did not know the H cognates of E balcony, farmer, and tractor. It is interesting to note that H balkon 'balcony' was unknown to both a freedom fighter /who might already have forgotten it/ and a 2nd-generation speaker /who might never have learned it/. The awareness/unawareness of cognates can naturally result in such hybrids as the gáz pedal cited in 2.4.

SEMANTIC LOANS are exemplified by H gáz used in the sense of gasoline, and H drapéria used to mean 'drapery, curtain'. Since metropolitan H gáz only means 'a gas or gaseous mixture', and drapéria only 'an arrangement of cloth for use in interior decoration', these American Hungarian words might be termed false cognates of English words.

A third case of semantic importation can be seen in a freedom fighter's use of E teeth to mean 'rungs', clearly induced by H létrafog /or létrafok/ 'rung of a ladder', literally: 'tooth of a ladder'.

A few LOAN TRANSLATIONS have also occurred in our tapes: H virágbakszi /<flower box/, H billenő trakk /<dump truck/, H utolsó lámpa /<taillight/ /metropolitan H has hátsó lámpa 'rear light'/, H fejlámpa /<headlight/ /metropolitan H has első lámpa 'front light'/; E first door /<első ajtó meaning 'front door'/, and E rainpipe /<esőcsatorna 'drainpipe', literally: 'rainpipe'/.

3. This paper is an attempt to look at bilingual speakers' vocabularies from various points of view. Controlled picture elicitation of vocabulary items is of course not enough. It has to be supplemented by an

analysis of spontaneous speech samples obtained from the same informants. Such an analysis is being planned for the near future.

APPENDIX

This appendix contains the "correct words" and the "acceptable but not quite correct words", both English and Hungarian. Brackets, that is //, are used to mark optional items: roof/ing/ is to be read as roof or roofing, /step/ladder as stepladder or ladder.

The words listed as "correct words in English" are those given in the Oxford Picture Dictionary of American English, with some synonyms elicited from informants which this writer felt to be also correct. In some cases an item in a picture is drawn /or its number indicated/ in such a way that words other than those listed in the Picture Dictionary also had to be accepted. For instance, item 14 in picture 23 /a workman installing a window/ is listed as workman, but carpenter and window installer have also been considered correct responses in view of the picture used in the elicitation.

The words listed as "correct words in Hungarian" have been established from Országh /1976/, with synonyms considered correct by the present writer also accepted. When items 1 and 2 in picture 36 /hay and hayloft according to the Picture Dictionary/ were called szalma 'straw' in Hungarian, that word was also regarded as a correct answer because what is marked 1 and 2 in picture 36 could easily be perceived as a szalmakazal 'strawstack' by Hungarians. Apparently the same holds true for Americans as well: I6, a 2nd-generation farmer, gave these responses: haystack, strawstack, bales of hay, bales of straw. All in all, the following items in the four pictures used are considered misinterpretable: item 4 in picture 23 and item 1 in picture 26: shingle or roof, item 14 in 23: workman or carpenter or window installer, item 4 in 26: balcony or railing, item 6 in 26: garage or garage door, item 20 in 26: tool shed or garage, items 1 and 2 in 36: hay or hayloft or haystack or strawstack, item 8 in 36: field or lawn, item 18 in 36: tractor or tire, item 31 in 36: duckling or gosling, item 32 in 36: duck or goose, item 15 in 38: choke or cigarette lighter, item 16 in 38: speedometer or clock, item 29 in 38: headlight or front bumper.

Picture 23: On a Building Site /Építkezés/

No. of item in picture	Correct word in English	Acceptable word in E	Correct word in H	Acceptable word in H
1	crane		/emelő/ daru	emelő
2	bricklayer, mason		/falazó/ kőműves	
3	rafters, a beam in the roof		szarufa, tetőgeren- da, /tartó/- gerenda	
4	shingles, roof/ing/		zsindely, cserép /ház/tető	
5	/step/ladder		létra	
6	rung, spoke, step		létrafok, fog	
7	scaffolding		állvány/zat/	
8	bricks		tégglák	
9	/drain/pipe, plumbing		vízlevezető cső, lefolyó- cső, szenny- vízcsatorna	/víz/cső
10	foundations		alap/zat/, fundamentum	
11	board, two- by-four		deszka, palló	
12	pick/ax/		csákány	
13	shovel		lapát	
14	workman, carpenter, window in- staller		munkás, ács, üveges	
15	sand		homok	
16	cement, gravel		cement, sóder, kavics	
17	trowel		vakolókanál, malteros- kanál, simí- tőkanál, kő- műveskanál	cement simító
18	hod		habarcsbordó saroglya, téglahordó saroglya	cement- bordó
19	level		vízszintező, vízmérő	
20	excavator, bulldozer, backhoe		exkavátor, kotrógép, ásógép, bulldózer	

21	cement mixer, mortar mixer	betonkeverő /gép/, cement- keverő /gép/, malterkeverő	
22	/dump/ truck	billenőkocsi, teherautó, billenőautó	
23	pneumatic drill, air hammer	légfúró, légkalapács	kötőrő
24	wheelbarrow	talicska	

Picture 26: A House /Egy ház/

1	roof/ing/, shingle	/ház/tető	
2	chimney	kémény	
3	/outside/ side, the wall, front of siding the house	fal, homlokzat	
4	balcony, railing/s/	erkély, korlát	kerítés
5	patio	loggia, terasz	pitvar
6	garage, garage door	garázs, garázsajtó	
7	/front/ door house door	/bejárati/ ajtó, első ajtó	
8	/attic/ window	/padlás/- ablak	
9	window frame	ablakráma, ablakkeret	
10	windowpane, glass	/ablak/üveg	ablak
11	/window/sill, window ledge	ablakpárkány, virágláda	
12	shutter/s/	zsalu/gáter/	
13	window box, flower box, planter, flowers	virágláda, virágtartó, virágok /a párkányon/	
14	curtain, draperies, drapes	függöny, firhang	
15	blind, shade/s/	függöny, vászonroló, roletta, redőny	
16	gutter/s/	esővízcsatorna, eresz	
17	drainpipe, downspout	lefolyócső, vízlevezető cső,	

18	/door/mat	ereszlefolyó, /eső/csatorna
19	antenna, aerial, TV antenna	lábtörő /tévé/an- tenna
20	/tool/ shed, shack, garage	szerszámos kamra, szer- számos ház, pajta, kerti ház, kis ház
21	grass, lawn	pázsit, gye, fű

Picture 36: On the Farm /Farm/

1	hayloft, hay, barn, haystack,	szénakazal, vala- szalmakazal milyen
2	xx strawstack, bales of hay, bales of straw	/letakarva/, kukori- széna, cagóré szalma
3	cowshed, cowbarn, stable, barn	istálló
4	barn	csűr, pajta, gazdasági épület, istál- ló /fala/, raktár
5	/hog/pen, lean-to pigpen, hoghouse	/disznó/ól
6	/barn/yard	/baromfi/ud- var, gazdasági udvar
7	/farm/house	/lakó/ház
8	field, lawn	mező, földek, legelő, lu- cerna, gye
9	pond	tavacska, pocsolya, itató tó, kis tó
10	/rail/ fence, picket fence	kerítés, korlát

xx

Owing to the misinterpretability of items 1 and 2 /revealed in trial uses of this picture/, informants were asked "to name items 1 and 2 together".

11	fruit tree	gyümölcsfa,	
		szederfa, fa	
12	orchard	gyümölcsös	
13	scarecrow	madárijesztő	
14	wheat, crop,	búza, gabona	
	grainfield		
15	farmer, combine	kombájnos, farmer,	
	driver, combine	arató-cséplő- traktoros	
	operator	gép vezető	
16	combine	kombájn, ara-	
	harvest machine	tó-cséplő gép,	
		aratógép	
17	irrigation	/öntöző/csa-	
	canal,	torna	
	irrigation		
	ditch		
18	tractor,	traktor	
	tire		
19	plow	eke	
20	furrow/s/	barázda	föld
21	cow	tehén	
22	calf	/kis/borjú	
23	bull	bika	
24	goats	kecskék	
25	horse	ló	
26	mane	sörény	
27	hoof	pata	
28	saddle	nyereg	
29	sheep	birka	
30	lamb	bárány,	
		/kis/birka	
31	duckling,	kiskacsa,	
	baby duck,	kisliba	
	gosling,		
	little geese		
32	duck, goose	kaçsa, liba	
33	hen, chicken	tyúk	
34	rooster	kakas	
35	/baby/ chick,	kiscsirke,	
	little chick/en/	kiscsibe	

Picture 38: Travel by Road /Autók/

1	rearview mirror	visszapillantó tükör	tükör
2	trunk	csomagtartó	a kocsi hátsó része
3	gas cap	tanksapka	a benzin-tartály teteje

4	taillight, brake light	hátsó lámpa, féklámpa, rükverc lámpa	
5	turn signal, direc- turn light, tional back light light	indexlámpa	
6	bumper	ütköző	
7	exhaust	kipufogócső	
8	tire	kerék, gumi	
9	antenna, aerial	/rádió/an- tenna	a rádió felvevője
10	windshield	szélvédőüveg, szélvédőablak	
11	windshield wiper	ablaktörlő	ablaktisz- tító
12	dashboard, instrument panel	műszerfal	
13	fuel gauge, gas gauge	benzinszint- mutató	
14	ignition /key/	/slusssz/kulcs, indítókulcs	
15	choke, /ciga- rette/ lighter	szívató, szí- vargyújtó, cigaretta- gyújtó	
16	speedometer, clock	sebességmérő, kilóméteróra, óra	
17	steering wheel	kormánykerék	
18	accelerator, gas pedal	gázpedál	gáz
19	hand brake, emergency brake	kézifék	
20	clutch	kuplung	
21	gearshift	seb/esség/- váltó	
22	brake	fék	lábbfék
23	/front/ seat	/vezető/- ülés	szék
24	seat belt, safety belt	biztonsági öv	
25	/car/ radio	rádió	
26	hood	motorháztető	
27	grill	hűtőrács, díszrács	
28	license plate	rendszám-tábla	
29	headlight, front bumper	reflektor, fényszóró, első lámpa	lámpa
30	hubcap	dísz tárcsa	

31	engine /compartment/, motor	motor/ház/	
32	battery	akkumulátor	
33	radiator	/hordás/ hűtő, víz- hűtő, radiátor	
34	distributor	/gyújtás/- elosztó	
35	spark plug	gyertya	
36	cylinder head	hengerfej	
37	sedan, family car	négyülékes négyajtós autó, személyautó, limousine	autó, négyajtós
38	convertible	felnyitható tetjű autó, sportkocsi, nyitott-tetős kocsi	
39	sports coupe, sport car	/sport/kupé, sportkocsi, sportautó	
40	station wagon	kombi, furgon	

NOTES

x

I am grateful to Jeff Harlig /University of Chicago/ and Professor Catherine O. Ringen /University of Iowa/ for their helpful comments on an earlier version of this paper.

1

The project has been sponsored by Indiana University, Bloomington; Tulipános Láda, The Treasure Chest of Hungarian Culture, Inc., Chicago; and the Linguistics Institute, Hungarian Academy of Sciences, Budapest. For a brief description see Kontra and Nehler forthcoming.

2

I am indebted to Gregory L. Nehler /Indiana University/ and Jeff Harlig /University of Chicago/ for conducting the E interviews here analyzed.

3

Owing to inadvertent erasure of his first 15 responses to picture 36 in both the E and the H recordings, I3's total number of responses is 43, rather than 58.

4

One might expect 2nd/3rd-generation speakers to perform like native speakers with no ethnic background. This does not seem to be the case here, since in almost 15 per cent of the cases I5 6-11 gave an incorrect

E response or no answer at all. Admittedly, some of the items /e.g. hod/ are not necessarily part of every E speaker's vocabulary, others /e.g. pneumatic drill/ might have been mistaken for something else or just not remembered. /Standardization in either E or H of the pictures used has not been carried out./ But notice that ethnic background does influence the E of a native speaker. For instance, I9, a 55-year-old woman born and raised in South Bend, uses [laisnis] for E license plate and H rendszámtábla 'license plate' alike.

- 5 Patios do not exist in H culture, hence there is no commonly accepted H equivalent for them. Terasz, or perhaps loggia, seem the closest H words to denote item 5 in picture 26.

- 6 It is only natural that informants should not know the H word for 'combine operator' since combines and their operators were little known in Hungary before 1956, i.e. when they left the old country.

REFERENCES

- Baxter, James. 1980. The Dictionary and Vocabulary Behavior: A Single Word or a Handful? TESOL Quarterly 14: 325-36.
- Clyne, Michael. 1972. Perspectives on Language Contact. Melbourne: The Hawthorn Press.
- Dahl, Hartvig. 1979. Word Frequencies of Spoken American English. Essex, Conn.: Verbatim.
- Fishman, Joshua A. 1966. Hungarian Language Maintenance in the United States. Bloomington: Indiana University.
- Haugen, Einar. 1953. The Norwegian Language in America. Philadelphia: University of Pennsylvania Press.
- Kinloch, A. M. 1971. The Use of Pictures in Elicitation. American Speech 46: 38-46.
- Kontra, Miklós and Gregory L. Nehler. Language Usage Interview with a Hungarian-American. Forthcoming in The Canadian-American Review of Hungarian Studies.
- Lyra, Franciszek. 1962. English and Polish in Contact. Unpublished Ph.D. dissertation, Indiana University-Bloomington.
- Országh, László. 1976. A Comprehensive English-Hungarian Dictionary. 2 vols. Budapest: Akadémiai Kiadó.
- Parnwell, E. C. 1978. Oxford Picture Dictionary of American English. New York: Oxford University Press.

- Patkowski, Mark S. 1980. The Sensitive Period for the Acquisition of Syntax in a Second Language. Language Learning 30: 449-72.
- Peñalosa, Fernando. 1980. Chicano Sociolinguistics. Rowley, Mass.: Newbury House.
- Seaman, P. David. 1972. Modern Greek and American English in Contact. The Hague: Mouton.
- Vildomec, Věroboj. 1963. Multilingualism. Leiden: A. W. Sythoff.

A BILINGUAL CONCORDANCE SYSTEM AND ITS USE IN LINGUISTIC STUDIES

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This paper will first describe the design of a bilingual concordance system. In this system, a text and its translation are divided into translation segments by a bilingual data entry operator. A bilingual concordance is then produced from the translation segments. Sample input and output will be displayed and the internal function of the concordance system will be outlined.

After describing the design of the system, some possible uses will be explored.

Finally, there will be a discussion of an actual bilingual concordance which was recently produced at the Brigham Young University Language Research Center.

SYSTEM DESIGN

A monolingual concordance is a tool for studying a text. A monolingual concordance does not impose an interpretation of the text on the researcher. It merely organizes the text so that all occurrences of a given word are grouped together.

By analogy to a monolingual concordance, a bilingual concordance would be a tool for studying a text and its translation. Ideally, a bilingual concordance would not impose an interpretation of the translation on the researcher. It would merely organize the text so that all instances of a given word are grouped together along with the translation in each instance.

The desire for a degree of objectivity is problematical for the maker of a bilingual concordance: What should be placed in the concordance as the translation of a word which is part of a phrase translated as a unit? For example, the phrase "a supply ship bound for an Eskimo community" might be translated "un cargo qui se rend à un village Esquimau." What translation should be supplied in a bilingual concordance for the word "bound"? The phrase "qui se rend" (literally "which renders itself") is a possibility, but one might argue against including the relative pronoun when the source text contained none. Also, is "cargo" the translation of "supply" or "ship"?

After discussing the matter with several colleagues in the field of computers and the humanities, including Randy Jones (Brigham Young U.), Phil Smith (U. Waterloo), Sydney Lamb (Semi-onics), and Joseph Grimes (Cornell U.), the author decided to use a format suggested by Joseph Grimes. In this format, the source and translated texts are divided into units which we will call "translation segments." For a given translation segment in

the source text, the corresponding target language translation segment contains the translation of everything in the source segment, but there need be no decision as to the translation of a particular word. Continuing the above example, the derived entry in the bilingual concordance for the word "bound" might be:

a supply ship <bound> -----> un cargo qui se rend
for an Eskimo village. -----> a un village Eskimau.

This format avoids making a decision as to the exact translation of a word but organizes the data so that each researcher can use it in supporting a particular interpretation. This format is also much easier to prepare than a bilingual concordance on a word-for-word basis because the bilingual data entry operator need only make decisions about segment boundaries. No explicit claim is made about what word translates to what word. It is simply claimed that each word in the source segment has its translation somewhere in the target segment. Figure 1 contains sample data as it is entered by the bilingual data entry operator. Figure 2 contains sample output from the concordance system.

The algorithm used by the concordance program itself is very simple. The program takes a pair of segments, one in the source language and the corresponding one in the target language. Then the program divides the source text segment into words and evaluates whether each word should be used in the concordance. The system may be set to qualify all words or only selected words or only selected word pairs, both of which must appear in the same segment. This final option allows the researcher to pick out selected phrases such as "BLOW UP."

For each qualifying word, the program creates a concordance line. After the concordance lines are created for a range of the alphabet, the concordance lines are sorted by source text keyword. Finally, the concordance program formats the concordance line for output. At this point, accent marks are moved from being printed after the character they apply to. The details of handling accent marks will depend on the exact nature of the hard copy output equipment used. But otherwise, the system should be easily implemented on any medium- to large-scale computer system.

USING A BILINGUAL CONCORDANCE

The author has long been interested in better understanding the process of translation, especially the process of word selection. Under what conditions is one possible translation of a word selected over another possible translation? How arbitrary is it? Can it be somewhat formalized?

The above questions were the original motivation for developing a bilingual concordance system, but it now seems that a bilingual concordance could have many uses. The following discussion is not intended to be exhaustive.

Let us begin with the first intended application -- trying to understand translation. A translator is not normally aware of the process of translation even when in the act of it. Interrogating translators as to how they translate could be

Figure 1
Sample Input

<u>REFERENCE</u>	<u>SOURCE SEGMENT</u>	<u>TARGET SEGMENT</u>
MRD00049	It was toward the close	Ce fut vers la fin
MRD00050	of the fifth or sixth	du cinquième ou sixième
MRD00051	month of his seclusion,	mois de sa retraite,
MRD00052	and while the pestilence	et pendant que le fléau
	raged most furiously	sévissait au dehors avec
	abroad	le plus de rage,
MRD00053	that the Prince Prospero	que le prince Prospero
	entertained his thous-	gratifia ses mille
	and friends	amis
MRD00054	at a masked ball of the	d'un bal masqué de la
	most unusual magnifi-	plus insolite magni-
	cence.	ficence.
MRD00055	It was a voluptuous scene,	Tableau voluptueux que
	that masquerade.	cette mascarade.
MRD00056	But first let me tell	Mais d'abord laissez-moi
		vous décrire
MRD00057	of the rooms in which it	les salles où elle a eu
	was held.	lieu.
MRD00058	These were seven--an	Il y en avait sept,--une
	imperial suite.	enfilade impériale.
MRD00059	In many palaces, however,	Dans beaucoup de palais,
	such suites	ces séries de salons
MRD00060	form a long and straight	forment de longues
	vista,	perspectives en ligne
		droite,
MRD00061	while the folding doors	quand les battants des
	slide back nearly to	portes sont rabattus
	the walls	sur les murs
MRD00062	on either hand, so that	de chaque côté, de sorts
		que
MRD00063	the view of the whole	le regard s'enfonce
	extent is scarcely	jusqu'au bout sans
	impeded.	obstacle.
WDG00166	One objective will be	Il s'agit entre autres
WDG00167	to lessen the emphasis on	de changer ce programme
	classroom training	
WDG00168	to take advantage of	en vue de mieux utiliser
WDG00169	the learning environment	les structures d'appren-
	available in industry,	tissage des entreprises
WDG00170	and to focus more pre-	et de se concentrer
	cisely	davantage
WDG00171	on certain kinds of	sur certaines diffi-
	employment problems	cultés d'emploi
WDG00172	that people face.	auxquelles se heurte
		la main-d'oeuvre.

Figure 2
Sample Output

<u>REFERENCE</u>	<u>SOURCE SEGMENT</u>	<u>TARGET SEGMENT</u>
<AT>		
MRD0069	more than one <at> a time	plus d'une à la fois
MRD0298	<At> first, as he spoke	D'abord, pendant qu'il parlait
CAC0304	<At> one time it was believed that	On a cru pendant longtemps que
CM00127	We came <at> length to the foot of the descent.	Nous atteignîmes enfin les derniers degrés.
CAC0432	Meet <at> least once a year.	Siègent au moins une fois tous les 12 mois.
<BEGIN>		
WDG0149	can it <begin> to divide	que le gouvernement peut commencer à répartir
CAC0049	to <begin> to draft the resolutions that would become	pour rédiger les résolutions qui allaient constituer
<CEASED>		
MRD0148	But when the echoes had fully <ceased>,	Mais quand l'écho s'était tout à fait évanoui,
MRD0224	And then the music <ceased>, as I have told;	Alors, comme je l'ai dit, la musique s'arrêta;
CM00321	I <ceased> my labors and sat down upon the bones.	j'interrompis ma besogne et m'accroupis sur les ossements.
PIT0861	when the motion of the hellish machine <ceased>,	que le mouvement de l'inférieure machine cessa,
PIT0831	and <chilled> my heart	et glaçait mon cœur
MRD0263	The mask which <concealed> the visage	Le masque qui cachait le visage
CM00236	We <continued> our route	Nous continuâmes notre route
PIT0383	as it <dashed> against the sides of the chasm	il battait les parois du gouffre

quite valuable; but this paper proposes that much insight can be gained from studying the static result of the act of translating -- the translated text.

It is certainly not controversial to say that a translation is not a "word for word" process or even a "phrase for phrase" process. A bilingual concordance can be a tool for answering such questions as the following: What portion of translation is straightforward substitution and what portion is not? For the portion which is not, does there seem to be any pattern? Word senses are certainly difficult to define. Could word sense boundaries be defined in terms of translation equivalents in several languages? What is the frequency of use of various word senses? What frequently occurring words are likely to cause trouble for a speaker of a certain language learning a certain other language? Bilingual concordances may be useful tools in answering such questions.

Suppose an important literary text has three major translations. A bilingual concordance might be done for each translation. This should be a valuable tool to a researcher making a careful contrastive study of the translations. It would, for example, allow a rapid comparison of how the various translators translated a troublesome word or phrase. Of course, the same comparison could be made by using a monolingual concordance of the source text and looking up the word in question in all the translations.

Perhaps a variation of the system could be developed which would use a standard segmentation of the source text and concord only those segments whose translation is not consistent across the various translations being studied.

Suppose, rather than literary translation, we are concerned with technical translation. In technical documents there are a number of words and phrases which are expected to be translated consistently. Creative variation in choice of translation for a phrase can be desirable in literary translation, but is generally not desirable in technical translation.

A bilingual concordance of a technical text and its translation would provide a tool for quickly determining whether or not a given term was translated consistently throughout the document. This might be particularly important to check if several translators were involved in the project.

A legal document with an official translation may be another candidate for analysis using a bilingual concordance.

Shifting from individual documents to large collections of documents, a bilingual concordance could be used to develop a new bilingual dictionary or to improve an existing one. Suppose one is interested in producing a new or improved dictionary for some technical area. A collection of well-translated texts in that subject matter could be segmented and the resulting bilingual concordance could be used to produce bilingual dictionary entries based on actual translations. Such a dictionary might include considerably more contextual information than typical existing dictionaries. It could also give the relative

frequency of occurrence of various translation equivalents. Given a sufficiently large data base, a bilingual concordance could also be used to identify collocations that have a consistent translation. Such information could be used either in a dictionary or in a computer system to assist human translators. A substantial bilingual concordance could also be used in the development of a machine translation system for some narrow sublanguage. Test documents could be selected from the corpus used to produce the bilingual concordance. Then the machine translation output could be compared with the human translation of the same text. Discrepancies could be studied by consulting appropriate sections of the bilingual concordance. The concordance should allow the linguistic analyst to determine whether the discrepancy is an instance of an error or simply the selection of one alternative by the machine and another by the human. If the discrepancy turns out to be an error by the machine, the linguistic analyst will develop an algorithm to correct the problem, and the algorithm can be checked against other similar instances, again using the bilingual concordance. All too often, new algorithms are implemented after being checked against only one or two examples and are subsequently found to be seriously defective when applied to other examples.

A SAMPLE BILINGUAL CONCORDANCE

For the purposes of this paper, the author chose to produce a small bilingual concordance of some documents which should be of some interest to most readers, rather than narrow, highly technical documents.

The first group of documents consists of three short stories by Edgar Allen Poe and their translations into French by Charles Baudelaire. The second group consists of two documents in English and French produced by the Canadian government to explain to the general public how Canadian tax money is spent and to discuss a proposed change in the Canadian Constitution. These documents represent approximately 20,000 words of running text.

The first step in processing the documents is to assign a three-character code to identify the document. Then the source and target language texts are carefully segmented by a bilingual data entry operator to produce pairs of translation segments. Figure 3 provides the identification codes selected for the documents in question and the number of segment pairs identified in each. The process of segmentation and data entry for these documents required approximately 80 man hours. Once the data was entered, the concordance was produced after one evening's work on the Brigham Young University Language Research Center computer--an IBM 370/138. The development of the programs used to produce the concordance was a matter of a month or two part time.

Of course, not everyone will be interested in the same aspects of a concordance, but there will now follow a discussion of a few entries in the sample concordance which were of interest to the author.

Figure 3
Documents Selected for a
Sample Bilingual Concordance

<u>ID</u>	<u># of Seg- ment Pairs</u>	
MRD	357	<u>The Masque of the Red Death by Edgar Allen Poe.</u> English text in <u>Tales by Edgar Allen Poe</u> , Dodd Mead, New York, 1952. French text in <u>Nouvelles</u> <u>Histoires Extraordinaires</u> , Editions Garnier Freres, Paris, 1961, translated by Charles Baudelaire.
CMO	392	<u>The Cask of Amontillado by Edgar Allen Poe</u> (same source as <u>The Masque of the Red Death</u>).
PIT	995	<u>The Pit and the Pendulum by Edgar Allen Poe</u> (same source as <u>The Masque of the Red Death</u>).
CAC	970	The Canadian Constitution 1980, from Publica- tions Canada, CP1986B, Ottawa K1P6G6.
WDG	556	<u>Where do all the dollars go?</u> Canadian Document Collection BT47-173 Information Canada, 1973.

Prepositions and particles are well known for their tendency to combine with other constituents, especially verbs, and form compounds. A glance at the entry for "about" reveals several usage categories. A usage of "about" meaning approximately "concerning," is translated as "sur" (literally "on"). A concrete usage meaning approximately "around" is translated as "autour" (literally "around"). It is perhaps only coincidental but yet interesting to recall the grammar school rule of saying "the discussion centered on x" rather than "the discussion centered around x," where both expressions mean the discussion was "about x." The above detail could be a tiny element of a study of prepositions and the relation between concrete and abstract usage.

Still looking at the entry for "about," we see that the verb-particle combination "bring about" is translated as "realiser" (literally "to make real"). However, consider the phrase "designed to bring about the repatriation." By a mechanical process of phrase-by-phrase translation, we might obtain "destiné à realiser le repatriement." However, the translator may have felt this phrase to be too heavy and in any case produced the following translation: "visant à repatrier" (literally "aiming to repatriate"). The goal here is not to decide whether the translation as made in the printed document is good or bad, but to point out that the translation in the document is not a simple phrase-by-phrase translation.

The preposition "at" also combines easily. We notice such units as "at length" (translating to "enfin"), "at first" (translating to "d'abord") and "at least" (translating to "au moins"). But when we see "at one time" being translated as "pendant long temps" (literally "during long time"), we wonder whether this is another usage of "at" or an instance of lazy translation.

For the author, the most interesting segment containing "at" is "more than one at a time" which is rendered "plus d'une à la fois" (literally "more than one at the time"). This phrase raises the question of the correspondence between articles in English and French. It is well known that the English generic null article (e.g. "bananas are expensive") is often translated into French by a singular definite article (la banane est chère). But the "at a time" phrase involves a shift from an explicit indefinite to an explicit definite. A thorough study of such shifts and a model to explain them may be highly interesting.

The sample bilingual concordance pointed out in many ways how difficult the task of translation really is. Consider the culturally loaded U.S. term "affirmative action programs" and all it implies for an employer implementing such a program which may result (right or wrong) in a sort of reverse discrimination against qualified members of the white majority. In the sample concordance, we see that the poor translator gave up and used a bland phrase meaning "programs authorized by law."

The concordance can also point out false cognates. For example, the phrase "in effect" was not translated "en effet" (meaning "indeed!") but was translated as "en vigueur." Another example is the word "important." The French word "important"

can mean something very close to the English word with the same spelling, but can also mean "big." An important program is not necessarily big, and perhaps to avoid the ambiguity, the translator used the word "majeur" (major). By the way, consulting a standard English-French dictionary gave no hint of such a potential difficulty with the word "important."

Translation is an amazingly difficult task and in the author's opinion it is strange that so many people still think of computers in terms of replacing human translators rather than providing tools for human translators.

A human translator can easily select the appropriate translation for "with" in context ("avec," "grâce à," "chez," "de," "par," "à," etc.), but a machine does not do as well -- even with careful programming. Therefore, should not at least some of the effort in computers and translation be directed toward building better tools for human translators?

Of course, the author runs the risk of seeing someone else use the same sample bilingual concordance to formulate an argument for fully automatic translation. Nevertheless, an invitation is hereby extended to the linguistic community to consider using a bilingual concordance as a tool for linguistic research along the lines mentioned in this paper or along more interesting lines that have not occurred to the author. The author will be delighted to assist with the computer details in any way possible.



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